CHANGES IN STUDENT BORROWING AT PRIVATE NOT-FOR-PROFIT FOUR-YEAR INSTITUTIONS IN THE UNITED STATES

Susan A. Namalefe

Dissertation Prepared for the Degree of

DOCTOR OF PHILOSOPHY

UNIVERSITY OF NORTH TEXAS

May 2018

APPROVED:

Barrett Taylor, Major Professor
P. Daniel Chen, Committee Member
Veronica Jones, Committee Member
Janice Holden, Chair of the Department of Counseling and Higher Education
Randy Bomer, Dean of the College of Education
Victor Prybutok, Dean of the Toulouse Graduate School

Namalefe, Susan A. *Changes in Student Borrowing at Private Not-for-Profit Four Year Institutions in the United States*. Doctor of Philosophy (Higher Education), May 2018, 105 pp., 21 tables, 13 figures, references, 86 titles.

Trends in tuition and financial aid policy have increased the number of students who borrow for higher education and the aggregate debt students acquire. Most research on student borrowing over the years has analyzed the effects of borrowing and the prospects of indebtedness on individual students' choices and persistence. However, dynamics at the institutional level such as the need to ensure a stable flow of resources may accelerate or slow down student borrowing. Drawing on resource dependence theory, this study examined changes in student borrowing at private not for profit four year institutions in the US to identify trends and implications. A fixed effects regression analysis was applied to panel data from the Delta Cost Project and the National Association of College and University Business Officers. Analytical focus was on the financial and enrollment characteristics of private not for profit four-year institutions, the relationship between these characteristics and student borrowing, and whether these relationships are stable or change over time. Findings revealed that the financial and enrollment characteristics of private not for profit institutions during the study period were characterized by gradual variation. The results also revealed that most of the financial characteristics were predictive of student borrowing and that these relationships vary with time. Evidence from this study cautions higher education policy makers that high tuition dependence and the attendant student loan burden may disadvantage some students. Policy makers concerned about providing equitable access to higher education to all student subpopulations should try to moderate competition among institutions and tuition rises that intensify student borrowing. Institutional practices such as tuition maximization and selective price discrimination must be

moderated so that financial aid, including loans, can realize the objective of encouraging fairness and choice in higher education entry.

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

CHAPTER 1

INTRODUCTION

Background, Theory, and Problem Statement

Higher education has been recognized as a means to individual, social, and economic, development (McMahon, 2009). Higher education is required to train citizens for civic vocations, produce a skilled workforce that can harness technology and innovate to the advantage of the community, and equip graduates with a competitive edge to win in the social race (Labaree, 1997; McMahon, 2009). Against this backdrop of the diverse roles of higher education is a question of whether higher education is a public or private good. A public good is a service or commodity that benefits the whole community or public regardless of whether or not they contributed to the production of that good (Labaree, 1997). Public goods are characterized by "non-excludability and non-rivalry in consumption" (Baum & McPherson, 2011, p. 1). In contrast, a private good is a service or product that exclusively benefits those who can and are willing to pay for that good. The benefits of a private good "are selective and differential rather than collective and equal" (Labaree, 1997, p. 51). With private goods it is possible to exclude people who cannot or will not pay (Baum & McPherson, 2011).

The issue of whether higher education is a public or private good is pertinent in as far as it influences higher education policy, structure, and operations. Labaree (1997) observed that no policy change or development in education takes place without considering who stands to benefit. Apparent among the concerns is that higher education remains a valuable end user product that can socially benefit individuals. This concern has affected many aspects of higher education including its funding. Not only does it determine who can access higher education; it also influences who can pay or is expected to pay for it. Furthermore, the concept of higher

education as a private (versus public) good partially explains the gradual but dramatic changes in the funding of higher education. Indeed, the allocation of federal and state funding for public higher education in recent years suggests a move toward perceiving higher education as a private good principally benefiting the individual (American Federation of Teachers (AFT), 2012). The perception of higher education as a public good, justifies significant public expenditure on it warranted by the universal principle that society as a whole benefits from a highly-educated citizenry (Hearn & Longanecker, 1985). On the other hand, conception of higher education as a private good warrants substantial individual expenditure on it. This is based on the argument that individuals and society jointly benefit substantially from education, therefore both should share the cost of providing that education. However, because individuals might benefit more than the public, they should bear most of the responsibility of financing their education especially at the higher levels (Baum & McPherson, 2011; Hearn & Longanecker, 1985; McMahon, 2009). Trends such as "cost sharing," "privatization," and the "high tuition/high aid" model are consistent with the viewpoint that the benefits of higher education mostly accrue to individuals, rather than to the public. Undeniably in most businesses, where the consumer product is a "private" good offered to customers who can pay for it but can be held back from nonpayers, consumer payments become the predominant revenue source (Weisbrod, Ballou, & Asch, 2008).

Amidst the deliberation on whether higher education is a private or public good, higher education worldwide has undergone a period of considerable tension characterized by financial decline, policy variations, enrollment trends, demands for accountability, and ambiguity about educational aims (Altbach, Berdahl, & Gumport, 2005; Cameroon, 1983; Johnstone, 2002). Strong internal and peripheral forces driving change within higher education are altering its nature—its students, faculty, curriculum, pedagogy, technology, customer demands, finances,

and role in society (Altbach et al., 2005; Edge, 2004; Fathi & Wilson, 2009; Rowley Lujan & Dolence, 1997). Altbach and colleagues (2005) reiterated that public expectations and funding for higher education are fundamentally changing, and that internal and external changes within the academe are altering its "character—its students, faculty, governance, curriculum and very place in society" (p. 115).

Institutional financial resources are important in any study of how students finance their education. Higher education institutions in the US are vastly different and stratified depending on their revenue sources and subsidies availed to their students (Winston, 1995; 2004). The provision of higher education especially in private institutions is to some extent contingent on the consumers; the students themselves. Nevertheless, the relative position of institutions from the well off to the less affluent has implications on costs, prices, subsidies, and competition for students and resources. Those positions depend on how much revenue institutions have accumulated over time and their current financial health. Similarly, the subsidies available to students vary with institutions. For instance, affluent institutions tend to provide quality education at a lower price (Winston, 1995; 2004). Not-for-profit higher education institutions are what has been termed "donative-commercial" in that they are funded by both generous contributions from donors and tuition revenue from the sale of their services (Winston, 1995, p. 16). Because private institutions must compete for consumers, their sticker prices tend to rise to enable price discrimination (Winston, 1995). The general trend is that affluent students get admitted to prestigious institutions while disadvantaged students tend to enroll in institutions with lesser financial resources (Taylor & Morphew, 2013). The extent to which institutions are able to subsidize the cost of attendance may also be partly determined by broader economic trends and cycles (Belasco, Trivette, & Webber, 2014).

Funding has continuously been a major concern in higher education (Alstete, 2014). Johnstone (2001) affirmed that despite its increasing popularity, and perhaps because of it, higher education worldwide faces a “creeping austerity" (p.2), a gradual but persistent worsening of the financial condition of most institutions. Costs in higher education have continued to rise due to the cost disease, technological changes and innovations, the nature of the higher education industry, and the fiscal environment in which institutions operate (Archibald & Feldman, 2011). Higher education institutions have consequently become a combination of socially conscious providers of educational services and enterprises seeking income and ways of reducing expenditure (Weisbrod et al., 2008). Weisbrod and colleagues (2008) affirmed that higher education institutions are very resource hungry and will try all means to obtain revenue from all sources. The survival of private institutions has been specifically threatened from prehistoric times mostly because of their sizes, high cost, and heavy tuition dependence. Indeed, Breneman, (1996) observed that private not-for-profit institutions “especially the small ones” are very vulnerable because they lack substantial endowments and direct government subsidies and because they are highly tuition dependent. Moreover, with the expansion of public universities and colleges, private institutions have been marginalized. Amidst growing competition from public institutions, the funding of private not-for-profit institutions is further problematic because of escalating educational costs, anxiety about rising tuition, the wish to offer education to the disadvantaged, and a general decline in revenue sources (Breneman, 1996).

The demand for private higher education in the US has increased over time leading to many private institutions. But far from lessening the strain on financial resources as might be anticipated in a fast growing market with many paying consumers, financial pressures have increased (Alstete, 2014). The growth in enrollments has correspondingly increased students’

demands and expectations of expanded and improved facilities. Meanwhile, there has been no parallel increase in disposable income in many institutions (Alstete, 2014). Moreover, higher education has faced additional challenges including rising costs, slow or deteriorating family incomes, shifting student and public expectations, advances in technology, and a general fall in communal confidence in postsecondary education. Archibald and Feldman (2011) reiterated that the causes of sticker price tuition inflation at private not-for-profit institutions can be said to be vagaries of financial markets that affect institutional endowment portfolios.

Resources are important to the execution of the higher education mission. It is therefore critical that stable sources of funding are found to support new and existent enterprises (Alstete, 2014). Weisbrod and colleagues (2008) stressed that for institutions of higher education "especially the private ones," "revenue is not only desirable, it is indispensable" (p. 60). Therefore, regardless of their control and goals, institutions must generate income if they are to survive and succeed. This income is then expended to facilitate the achievement of institutional goals (Weisbrod et al., 2008). For that reason, conditions of financial decline threaten institutional existence. For instance, institutions have to compete with each other for funds from scarce resources especially tuition paying students, donations, research grants, and commercial research funding. Institutions further compete for talented students, star athletes, faculty, and other assorted symbols of reputation, excellence, and rank (McPherson & Schapiro, 1999; Taylor & Morphew, 2014; Weisbrod et al., 2008). Private institutions have additional challenges caused by extensive demographic deterioration. At some institutions, there are more available spaces than the number of students able and/or willing to pay the posted tuition prices. This challenge is exacerbated by the presence of comparatively affordable public colleges and universities. Because they are not always assured of solid enrollment, private institutions must be ingenious in

their pricing and use of financial aid (Breneman, 1996). Private institutions moreover have to expend funds on maintaining and enhancing their image of excellence. They are at the same time pressured to make their product reasonably priced for eligible students (McPherson & Schapiro, 1999).

According to resource dependence theory (RDT) (Pfeffer & Salancik 1978; Pfeffer, 2005) pressures and changes in the environment influence institutional behavior and operations. RDT highlights the interaction between an organization and its environment. Because organizations depend on resources for survival, depriving them of critical resources causes uncertainty, and threatens their existence. In order to survive, organizations must ensure a continuous flow of resources, by taking full advantage of existing resources, and maintaining important sources of revenue (Carroll & Stater, 2009; Jaeger & Thornton, 2005; Rhoades & Slaughter, 2004). Another tenet of RDT is that uncertainty or instability concerning a critical resource threatens the existence of institutions because it makes stakeholders doubtful about institutional viability (Pfeffer & Salancik, 1978). Stakeholders may respond by abandoning the unstable organization, or by addressing the source of uncertainty. Institutional behavior is consequently constrained and shaped by the requirements and pressures of important actors within its environment. And so, an organization is only effective to the extent that it can successfully meet the demands of those "significant others" in its environment who support its continued existence through resource provision (Pfeffer & Salancik, 1978; Pfeffer, 2005).

From a resource dependence perspective, the funding of higher education through financial aid, including loans, links variations in student borrowing to tuition. In many private institutions, tuition is the greatest recognizable source of funding. The increased dependence on tuition can be thought to be a significant contributor to the amounts and extent of student loans at

private colleges and universities. Tuition upsurges have been alleged to increase the demand for loans (Lucca, Nadauld, & Shen, 2015). Institutions have been thought to increase their tuition charges to secure the increasing sums of federal financial aid that have been made available to students mostly through loans (Belasco et al., 2014). Weisbrod and colleagues (2008) observed that over time, dependence on loans rather than tuition discounts has increased at private not-for-profit institutions. In a bid to maximize tuition revenue, institutions establish various programs considering students loan eligibility status. In their character of enrollment management and student counselling, institutions may also advise or sanction students to take on debt to pay for courses without sufficiently considering the students' ability to repay the credit. Financing agencies affiliated with institutions may similarly encourage students to borrow so that they can earn fees and interest on loans that are guaranteed by the federal government and therefore 'risk-free' to the creditor (Belfield, 2013; Fowles, 2014).

RDT further acknowledges that even though institutions face competing demands from numerous stakeholders, they cannot fully respond to all demands at the same time. For institutions to survive and succeed, "they must make strategic choices regarding outputs" (Fowles, 2014, p.277). Institutions can therefore approximate some balance between competing demands by associating them with critical funds. Priority is given to the needs of individuals or groups that avail the resources requisite for institutional survival (Fowles, 2014). Fowles (2014) asserted that institutions are obliged to those who provide operational capital. In that case, a change in the revenue structure towards great dependence on tuition could have severe and maybe inadvertent implications. Consumer minded tuition paying students will most likely demand a system "that offers qualitative difference between institutions at each level" (Labaree, 1997, p. 52). This reputational difference between institutions equally results into preferential

access to employment and further education. The unintended consequence however, is that reputation may become a weighty driving force in institutions determining everything done such as the students admitted, and the tuition charged (Labaree, 1997; Weisbrod et al., 2008).

RDT provides a useful framework for analyzing changes in aggregate borrowing at private not-for-profit institutions of higher education. It enables an analysis of both the forces at work within institutions, and the changing aspects of the peripheral environment institutions operate in, including the funds necessary for institutions' continued existence and achievement in that environment (Fowles, 2014). For colleges and universities, RDT suggests that changes in revenue sources will predict changes in program offerings. RDT further elucidates how competition in the environment determines students' inclination to pay for higher education (Weisbrod et al., 2008). The main principle of RDT is that resources are vital to the success of institutions. Institutions face challenges and vulnerability when resources decline and have to be sought from altered and diverse sources (Jaeger & Thornton, 2005). If funding from donations, endowments, and other sources considerably decline making tuition the major revenue source, and if students are willing to pay the high tuition to attend institutions of their choice, then institutions resort to "strategic maximization" (McPherson & Schapiro, 1999, p.17) and price discrimination. In response to financial austerity, institutions ask what the consumers are prepared to pay to maximize students' tuition (Weisbrod et al., 2008). This notion of "selective price discounting" offers lower rates to students who are reluctant to pay extra particularly the talented students whose enrollment enriches the standing of the institution (McPherson & Schapiro, 1999). Offering lower rates to some students is strategic in that, instead of institutions losing revenue by insisting on all students paying the sticker price, "they, like the airlines, gain

more in revenue by selling some seats at a discount than by leaving them empty" (McPherson & Winston, 1993, p.14).

There is a prevalent apprehension about rising tuition and how or even if students from diverse backgrounds can afford to finance their investments in higher education. During the past 10 years, there has been a 60% increase in tuition at private colleges, this trebled revenues during the same period. If current trends persist, by 2020 tuition at private institutions maybe over $240,000 (Clark & Wang, 2011). Between 2013-14 and 2014-15, average published tuition and fee prices increased by 3.7% at private nonprofit four-year institutions (The College Board, 2014). Although these increases are lower than those in the past years, college price increases are mounting up. This is an indication of public priorities, of prospects, and of the challenges students and families face in trying to access higher education (The College Board, 2014). Generally, tuition has been replacing other sources of revenue at private institutions.

Consistent with rising college costs, student financial aid has rapidly expanded as a form of federal support for higher education. The purpose is that students who join institutions of their choice should be able to pursue a full course without any financial limitations from their socioeconomic backgrounds (Jensen, 1981). The reauthorization of the Higher Education Act in 1992 made loans accessible to all students, irrespective of income (Belasco et al., 2014). While expanding access to higher education, this and other acts increased the amount of borrowing among students. Furthermore, to support the "completion agendas" state governments and the federal government have been encouraging more individuals to enroll and persist through college. This campaign could have increased educational prospects for previously disadvantaged students, but they have also increased the quantity of students who depend on loans to finance their education (Hillman, 2014). With government changing its aiding of higher education to

emphasize loans more than other forms of aid (Hearn, 1998), many students are forced to borrow heavily to pay tuition, fees, room, and board. As tuition becomes the major source of income for institutions, students have to borrow heavily in order to finance their expected contributions to educational costs (Doyle, 2012; Hearn, 1998; Project on Student Debt, 2011).

In view of RDT, prodigious response to student demands and preferences at private institutions may cause them to charge higher tuition to acquire expensive items that offer or symbolize superiority. Indeed, high tuition may signify value (McPherson, & Winston, 1993; Weisbrod et al., 2008) and it might make students willing to borrow to acquire that valuable education. "Within this status-conscious world of higher education, high tuition may not be a deterrent but an attraction, since it advertises the exclusivity and high standing of the institution" (Labaree, 1997, p.53). Pressures for intensive competition and radical stratification are liable to come more strongly from the top of the social scale than the bottom. Elite consumers stand to gain more from a stratified education system. This unfortunately might isolate some students from less advantaged backgrounds who might be priced out of higher education (Labaree, 1997).

RDT further suggests that student borrowing might be indicative of the characteristics of the institutions they attend. It proposes that contextual forces most likely influence student borrowing. For instance, the institution's financial condition may considerably influence students' borrowing intensities. Affluent institutions with big endowments and diverse revenue sources on top of tuition may provide scholarships and grants. Less profitable institutions may not be able to offer grants and scholarships to their students; hence students must borrow. Private institutions largely rely on tuition from students for revenue which may lead to more borrowing by students. Therefore, some private not-for-profit institutions may choose not to subsidize the cost of education for their students (Belfield, 2013).

By 2011, educational loans had increased to more than $1 trillion, raising both economic and moral challenges for students (Denhart, 2013). Denhart (2013) stressed that "it's a negative sum game for both student-borrowers and the economy" that bears adverse consequences including "slowing economic growth (translating into fewer jobs being created) and rising interest rates. Capital will not be as easy to access" (p.1). Today, many students have to decide between attending college and bearing a load of debt immediately after graduation, or completely opting out of college. Unfortunately, this choice is most crucial for those who would gain most from higher education, the economically disadvantaged, first generation students and people of color (AFT, 2012). Indeed, the weight of rising tuition and the attendant student loan burden might be falling excessively on those students who are most unable to stomach it (Taylor & Morphew, 2014). Additionally, students amass debt amidst an uncertain job market and economy. This jeopardizes their financial futures and threatens to create a highly-mortgaged generation. The increasing amount of student debt also raises concerns that it may expose taxpayers to default risks analogous to the housing bubble shortly before the financial crisis of 2008 (Denhart, 2013; Dynarski & Scott-Clayton, 2013).

Nearly 60% of students who received bachelor's degrees in 2012-13 from public and private nonprofit institutions graduated with an average debt of $27,300. This marked a 13% growth over five years and 19% over ten years (The College Board, 2014). Undoubtedly, students today are graduating with more debt than their colleagues five or ten years ago. Furthermore, because the number of people going to college has increased significantly over the past decade, the total amount borrowed each year and the total amount of outstanding debt have grown much faster than individual debt levels (The College Board, 2014). Student loans are obviously a dominant part of financing higher education in the US. Trends in higher education

tuition and loan policy have moved a larger proportion of students to borrow and have also increased the amount of debt students incur for higher education. The increased use of student loans probably facilitates more students to enroll and persist to completion. Therefore, student debt might be socially desirable (Hillman, 2014), and politically appealing. On the other hand, even though loans enable students to afford a college education, in the aftermath they produce a class of indebted graduates who must work to free themselves from the bondage of educational debts or be metaphorically imprisoned in debt (American Student Assistance [ASA], 2013;). This raises concerns such as, whether and how the next generation can afford necessities for example a home or car if their disposable income is committed to paying off student loans. Many graduates today find themselves in a predicament of struggling to thrive in the labor market while bearing a heavy debt burden.

Any investment in higher education is based on the belief that a well-educated citizenry wholly impacts society even as it benefits individuals (McMahon, 2009). Student loans are intended to facilitate more students to participate in higher education and afterwards improve society. But high tuition dependence and strong rivalry among institutions for funds and students has made institutions prioritize their own goals of maximizing tuition revenue. Not only has student financial aid become an important element in sustaining institutional finances, it has also become a vital calculated mechanism for enrolling students and maximizing institutional income. “Colleges and universities seeking to fill classroom seats encourage students to utilize loans to finance their education” (Razaki, Koprowski, & Lindberg, 2014, p. 95). The possibilities and prospects of a college degree are overturned when students’ financial futures are jeopardized by the financial strain of paying off a debt in an uncertain and shrinking economy. The irony is that student loans were invented to facilitate social mobility, but they could in effect limit graduates’

capability to achieve financially (ASA, 2013). Besides, when many students are expected and encouraged to borrow to pay for their education, and when the majority of these borrowers fail to repay their debts, it calls into question the practicality of the existing ways higher education in the US is funded. The aggregate effects of borrowing and the prospects of indebtedness on a variety of decisions among private college students is still not so clear. Also, the extent to which diverse institutional factors influence the growth or reduction of student debt needs to be analyzed (Belasco et al., 2014).

Existent research has mostly focused on the effect of student loans on student attainment by students' individual characteristic at public institutions. However, there is a dearth of literature on student debt in private institutions of higher education. This is surprising given the extensive and important history of private institutions of higher education in the US and the ways in which policymakers use them to enroll more students into higher education. Previous studies also did not emphasize the social, political, and financial circumstances of institutions and how they influence student loans. Nevertheless, borrowing is influenced by actions, opportunities, and other extenuating factors within the institutional environments. The type of college attended by students may influence students' borrowing behavior. For instance, risk aversion may be intensified for students in colleges registering low degree attainment rates. Besides, loans can be expected to have different effects on students of different income groups, but the trend and extent of these differences are not yet well understood (Dynarski, 2002). Therefore, there might be logical usefulness in examining changes in student borrowing within the wider context of institutional environments. It might be prudent to examine environmental relations and influences as determinants of student borrowing (Tolbert, 1885). This is especially so because

institutions are communal units set in, and influenced by constraining dynamics in the external environment (Altbach et al., 2005).

This study examined student borrowing at private not-for-profit four year institutions in the US. The focus on private not-for-profit four year colleges was for several reasons. Private not-for-profit four year colleges and universities are important in the American system of higher education, and have been used by policy makers to absorb excess demand for higher education. More than 60% of the degree awarding institutions in the US are private (Zumeta, 2011). Private institutions enroll more than one-third of all students and contribute to state and national research and economic development goals. Private institutions should therefore be critical players in considerations of socioeconomic difficulties in higher education especially because of the proneness of these institutions to fiscal and demographic oscillations (Hearn & Rosinger, 2014).

The resources available to support student subsidies, fees, and expenses vary with institutional control. From RDT, public and private colleges and universities have differing dependence relations with their environments (Tolbert, 1985). Dependence on different sources of revenue is one of their distinguishing features. As a result, there are different expectations for different types of institutions (Fowles, 2014). Furthermore, the major forces that have affected higher education in the recent past have varied for public and private institutions. Public institutions have been affected by the reduction in funding from state governments while private institutions have been challenged by reduced funding, demographic decline, and competition from cheaper public institutions (McPherson & Schapiro, 1999). Prices and expenditure are higher in the private sector in real terms before considering the opportunity costs students incur (Winston, 2004). Further still, while both public and private institutions may strategically maximize enrollments, and student financial aid, they approach it differently because of their

varying institutional motivations (McPherson & Schapiro, 1999). The public sector uses subsidies to provide a less costly education, the private sector uses its subsidies to compete for tuition paying students in the market (McPherson & Schapiro, 1999).

Being heavily tuition dependent, most private institutions also spend and demand more in tuition fees. Hence students at private institutions generally pay more than their counterparts at public institutions (Winston, 2004). High costs and expenses at private institutions could be because of intense competition. Private institutions especially the selective ones always strive to be the best they can be in all aspects of their operations. They fervently hunt for all the revenue they can acquire and utilize it to fund whatever they imagine will improve their services and reputation (Ehrenberg, 2000). As a result, they constantly increase their tuition levels beyond the rate of increase on the market. The principal cost driver is rivalry among private institutions to capitalize on their popularity and exploit all their potential by enhancing the excellence of faculty, learners, research, amenities, and other aspects of educational and student life (Ehrenberg, 2000). Unfortunately, this has also increased student borrowing at private colleges. It is therefore pertinent to analyze student borrowing at private institutions given that they have experienced constant change in the financing and pricing of their education over the recent past.

> They have increased tuition the most, in total dollar terms, generating more revenue from students willing and able to pay all or at least a large proportion of the tuition, increasingly discriminating among students and programs so as to increase total revenue and encouraging student reliance on loans, thereby facilitating student access while augmenting school revenue. (Weisbrod et al., 2008, p. 94)

In view of all the above, a closer examination of the cumulative changes in student borrowing at private not-for-profit four year institutions and what they signify was in order. For instance, how has student borrowing behavior changed in the past few years? What factors have contributed to low or high debt at private colleges? Is the growth in student borrowing indicative

of the characteristics of the students or of the institutions they attend? Does the amount borrowed influence the probability of persistence and graduation (Gross, Cekic, Hossler, & Hillman, 2009)? What are the implications of a decline in student borrowing? With this context in mind, the primary purpose of this study was to examine the factors associated with student borrowing at private four year institutions in the US. Specifically, relationships between institutional level variables, and student borrowing were explored. The study also sought to determine whether borrowing levels had changed for students overall and within particular private four year institutions over time?

Purpose

This study aimed at examining changes/trends in student borrowing at private not-for-profit four year institutions in the US in the past decade.

Research Questions

1. What are the financial and enrollment characteristics of private not-for-profit four year institutions in the US?
2. What is the relationship between the financial and enrollment characteristics of private not-for-profit four year institutions and student loans?
3. Are these relationships stable or do they change over time in response to the changing policy climate?

Significance of the Study

Tuition increases are mounting at all kinds of institutions. Additionally, the financial aid that is provided to students has changed with loans being more dominant than grants (Heller, & Rogers, 2006). This is an indication of public priorities, of prospects, and of the challenges

students and families face in trying to access higher education (The College Board, 2014) and they should bear implications for policymakers at the federal, state and institutional levels. Changes in the aggregate student debt obligation should be of concern especially to policymakers who have gradually shifted a greater portion of higher education costs to students. If legislators wish to provide approximate equal access to education to diverse student subpopulations, they should address the current trends in tuition's share of educational costs and resultant student borrowing or not borrowing. Otherwise the growing use of tuition and loans to counterbalance declining institutional revenue sources may benefit some students while hindering others (Taylor & Morphew, 2014). Institutions may similarly be compelled to review their financial aid, and enrollment policies, and the impact the policies have on student borrowing, persistence and attainment, and on institutional popularity.

Student responses to borrowing change over the course of their college careers. A chronological analysis of changes in student borrowing might therefore aid an understanding of the present and enable an estimation of the future of student loans at private four year institutions. This is fitting, especially because the story of higher education in the US has been one of constant change. Irrespective of the year or century the only constant in higher education in the US has been inadvertent or planned change (Thelin, 2011). Similarly, the development of educational goals in the US has been a trajectory change, of fluctuating priorities with the approval of specific objectives for specific times. These pendulum policy swings give higher education a periodic feature. Issues might be emphasized in the present, be relocated to the shadows only to resurface later with enhanced energy (Labaree, 1997). The effect of the predictor variables on student borrowing may similarly change with time. Hence the need to analyze changes over time so that long term trends can be recognized and harnessed.

The growing loan orientation in higher education should be of concern to policy makers in view of the goals of higher education. With more institutions becoming tuition dependent, change in higher education in the US is being partially influenced by the desire and pursuit of social mobility. In this case, the consumer concept dominates the structure of higher education, producing an atmosphere of end user created marketplace forces. The increasing role of customer related pressures should be of concern to policy makers. Otherwise institutions might lose their focus in trying to please customers in order to generate and maximize revenue. If higher education is dominated by marketplace structures and processes, emphasis will be put on customer selection, rivalry, stratification, and the preservation of autonomy. This might defeat the goals of education with winning being overvalued above learning, and opportunity being exalted above efficiency (Labaree, 1997).

This study will further contribute to the existing knowledge, research and literature on the student borrowing especially in the private sector. The suggestions from this study may cause higher education policymakers in various national systems to rethink the ways in which they finance higher education. For instance, in Africa, many governments are considering adopting student loans as a form of student financial aid. The study may also provide a basis for future investigations on this topic. Above all, this study is important to educators, scholars, and researchers in the field of higher education funding. Delving into this subject might strike a balance between socio-economic concerns, and the benefits of investing in higher education.

CHAPTER 2

LITERATURE REVIEW

Trends in tuition and financial aid policy have increased the number of students who borrow and the aggregate debt students acquire for higher education. However, the extent to which dynamics at the institutional level speed up or slow down the growth of debt is uncertain (Belasco et al., 2014). The effects of borrowing and the prospects of indebtedness on a variety of decisions among college students have been examined by various scholars (e.g. Avery & Turner, 2012; Hillman, 2014; Kim, 2007; Dowd & Coury, 2006; Dynarski & Scott-Clayton, 2013). Undeniably, most economic research on student loans over the years has concentrated on individuals and the effect of borrowing on students' choices and existence. However, how diverse environmental factors at the institutional level influence the growth or reduction of student debt has not received much attention (Hillman, 2015). The bulk of research on student loans has also mainly been about student loans at public institutions. Little specific emphasis has been paid to private not-for-profit institutions.

This study examined changes in student borrowing at private not-for-profit four year institutions to try and understand trends and their implications. Analyzing how institutional characteristics influence borrowing is important because it can guide students on which institutions to attend. This is equally important because whether students attend college or not is as important as where they attend college. The information can equally guide policy makers on what policies and practices encourage or reduce student borrowing (Craig & Raisanen, 2014). In this section, I examined existing information on student loans especially at private not-for-profit four year institutions. The focus of the literature review was on financial austerity and tuition dependence at private not-for-profit four year colleges, the financial and enrollment

characteristics of private not-for-profit four year institutions, the evolution of student loans as a form of financial aid, and the effects of student loans on students during and after college.

Financial Austerity and Tuition Dependence at Private Not-for-Profit Four-Year Colleges

The institutional environment in higher education varies depending on whether an institution is public or private with reliance on dissimilar revenue sources being a major difference between the two types of institutions. Higher education institutions are also different in the resources they control and the resources they offer to students. The familiar differences between higher education institutions reflect the varied funding scenarios and pressures. Tolbert (1985) asserted that the formal setting of institutions is diverse, with prospects varying for dissimilar institutions. For instance, private and public institutions draw on different sources of income for their operations. During the colonial period, private institutions received generous grants from state governments. This, however, changed following a Supreme Court decision establishing the self-sufficiency of private higher education institutions from government regulation and governance. Many states accordingly decreased direct funding to private institutions, and private institutions became more and more dependent on tuition, isolated endowment funds, and donations as revenue sources (Tolbert, 1985). Unlike their public counterparts, private institutions therefore do not have sizeable state subsidies to help decrease price hurdles. Moreover, some private institutions lack the enrollment capacity, endowment strength and status, and the influence to resist internal and environmental changes or rivalry. As a result, some private institutions face serious financial pressures (Tolbert, 1985). Another dissimilarity between public and private institutions is that public institutions essentially subsidize their education for all students by setting low sticker prices, while private institutions

post high sticker prices and give individual subsidies in the form of financial aid or discriminatory price discounting (Winston, 1999).

From RDT, revenue sources are important in understanding institutional behavior. Established revenue sources are required to maintain quality and viability in the face of rising financial pressures. It is apparent that revenue diversification is the most desirable institutional response to prolonged financial austerity at private not-for-profit institutions. However, revenue diversification is not easy to achieve especially for private not-for-profit institutions which have limited sources of revenue. Private institutions have to compete for public funds, for instance by enrolling students with the aim of profiting from student financial aid, and they must manage sizeable endowments if they are to noticeably benefit from federal tax exemptions. Moreover, at some private not-for-profit institutions there are more available spaces than the number of students able/or willing to pay the posted tuition prices. Also, not many of them have large endowment or generous state subsidies, which further demonstrates that diversification is not easy to achieve. The most feasible form of diversification for private not-for-profit institutions therefore, is to attract tuition paying students. Consistent with this idea, private not-for-profit institutions have responded to fiscal pressures by struggling to raise income from tuition (Jaquette, & Curs, 2015). Hence these institutions are highly tuition dependent. In addition, certain unique structural and admission actions shape the socioeconomic composition of students at private institutions (Hearn & Rosinger, 2014). Student borrowing can therefore be linked to institutional revenue/diversification seeking behaviors. RDT shows that the need to ensure a stable flow of resources may determine aggregate student borrowing at an institution. It proposes that there might be a relationship between heavy tuition dependence by private not-for-profit institutions and aggregate student loans (Tolbert, 1985).

Tuition plays a dual role in higher education. While it is a cost to the consumers (students), it is a source of income to institutions. Students would prefer lower tuition charges, but institutions can neither survive nor thrive without sufficient revenue (Weisbrod et al., 2008). Tuition being by far the major revenue source in private not-for-profit higher education implies that not-for-profit institutions obtain most of their revenue from tuition. Great tuition dependence demands that tuition be managed through practices such as tuition discounting, strategic maximization and enrollment management. However, tuition increases often entail increases in direct student aid. Many private not-for-profit institutions can hardly meet their enrollment targets and are forced to offer institutional grants and tuition discounts to increase enrollment. Since tuition is a primary source of student aid funds, increases in institutional student aid also mean increases in tuition (Breneman, 1996). Tuition increases can considerably contribute to the amounts and extent of student loans at private colleges and universities. Indeed, tuition upsurges have been alleged to increase the demand for loans (Lucca et al., 2015).

In the higher education environment which is characterized by competition for scarce resources, RDT links aggregate student borrowing to institutional reliance on tuition dollars. Private not-for-profit institutions depend on donations (charities, gifts, grants from individuals, and corporate gifts) for revenue (Weisbrod et al., 2008). They obtain limited financial support from governments. From RDT, if there is a decline in donations or lesser than expected endowment returns, private institutions may be forced to increase tuition (Weisbrod et al., 2008). Furthermore, private institutions have historically supported students but they equally depend on aid to produce tuition revenue. Being tuition dependent leads to a lot of pressure to generate tuition revenue from students. Students can access federal financial aid through loans which institutions can equally access when students pay tuition. With students being perceived as a

revenue source, institutions employ admission and revenue management schemes for instance, tuition discounting to enroll as many students as possible and maximize tuition dollars (Hillman, 2012). Indeed, institutions have been accused of exploiting the availability of loans to students (Doyle, 2012). Price discrimination can be a wonderful strategy for increasing revenue and private not-for-profit institutions maximize it depending on students' ability and need (Weisbrod et al., 2008). As a result, several institutions deliberately take advantage of students' willingness to pay. They purposefully manage tuition reductions to facilitate enrollment of students who improve institutional reputation while also increasing institutional income (Davis, 2013). Hillman (2012) stressed that tuition revenue generation and/or enhancement is the primary objective of tuition discounting for many institutions.

Unsurprisingly, the character and structure of financial aid in the US higher education system has experienced several swift changes (McPherson & Schapiro,1999). Institutions no longer regard financial aid as an honorable benevolent prospect designed to help students. On the contrary financial aid has become a vital calculated mechanism for enrolling students and maximizing institutional income (McPherson & Schapiro,1999). Indeed, strong rivalry among institutions for funds and students has unsurprisingly made student financial aid an important element in sustaining institutional finances. From a resource dependence perspective, this "strategic emphasis" in enrollment and financial aid is a result of changes in the higher education policy environment. McPherson and Schapiro (1999) affirmed that, "intense competition among colleges and universities for dollars and students has inevitably made student financial aid a strategic variable in maintaining institutions' financial health" (p.17). Hence, institutions have increasingly and strategically used student aid to capture tuition revenue while presenting a reasonable net price to as many students as possible (McPherson, & Schapiro, 1999).

In view of the above, the disparity in borrowing in institutional categories depends on the income structures of institutions, and their ability to attract tuition, and extremely needy students in terms of financial aid (Avery &Turner, 2012). Institutional charges including tuition and other costs, institutional size, worth of the institution's endowment, class size, contributions from former students, and institutional diversity all influence the extent of student borrowing. Taylor and colleagues (2013) affirmed that private not-for-profit institutions operate in the quasi-market of student tuition payments. Quasi-markets are spheres of influence characterized by strong rivalry for resources by colleges and universities (Taylor, Cantwell, & Slaughter, 2013). Taylor and Morphew (2014) observed that in such a competitive higher education environment, well off institutions gain advantage over their revenue deprived counterparts in the competition for tuition paying students. Less affluent institutions may not increase their tuition fees as hastily as their prosperous colleagues. However, they have fewer sources of supplementary revenue to tuition and may be forced to somehow increase tuition (Taylor & Morphew, 2014). They also serve a high-risk group of pupils who lean towards borrowing and consequent defaulting on their loans irrespective of the institution they attend (Hillman, 2014). This risk is exacerbated by the fact that less affluent institutions lack the means to lessen the financial burden of their enrollees for instance through institutional grants. And so, students in less affluent institutions may borrow more than those who attend affluent institutions. It is therefore possible that the availability or absence of auxiliary resources to institutions may influence student borrowing because it influences institutional tuition charges, and the financial aid available to students. At private institutions, the amount of institutional assets and educational support to students may influence borrowing intensity. Overall, student borrowing can significantly differ with institutions because of several dynamics, for example variations in tuition and fees, living costs at the place of

residence, student demographics, the obtainability of need conscious aid from the institution and states, institutional financial aid policies and practices, and the extent to which parents borrow (Parent PLUS loans) (Project on student debt, 2013).

From an institutional perspective, financial aid including loans, can be manipulated by institutions to generate the income required for survival. Student financial aid can be used as a means of revenue management by institutions. Over and above aiding students, financial aid equally benefits institutions. By attracting students and their accompanying tuition moneys to enroll, institutions can tactically control aid to get the most out of the disposable tuition income produced per sponsored student or add to it (Hillman, 2012). A lot of institutions are becoming strategic in their use of financial aid so that supported students boost institutional reputation while also advancing institutional aims of acquiring income. They therefore cautiously design proficient means of allocating financial aid so that the aid schemes support institutional beliefs, and educational goals, and boost the institutional revenue base. Institutional aid is specifically used as an admission managing tool to achieve several purposes including; attracting students to decide on a particular institution over competitors, enrolling talented students, and decreasing price obstacles for lower-income students, or raising admission rates. Tuition discounts have especially been regarded as a resource management instrument that assists institutions to improve their financial circumstances (Hillman, 2012).

With such strategic maximization, institutions deliberately develop a financial aid approach that can achieve the collective (and contradictory) aims of attracting accomplished students while acquiring as much tuition income from them as possible (Hearn & Rosinger, 2014). While institutions have tried to control the tuition discounting, it has persisted in recent times in an effort to draw more students. From RDT, highly tuition dependent institutions must

satisfy tuition paying students if they are to survive and flourish (Weisbrod et al., 2008). Private institutions offer need-based student aid to counter balance price obstacles, but their excessive reliance on the market forces them to make cost and financial aid decisions basing on various institutional objectives other than raising enrollment and subsequent income. For instance, they must consider reinforcing educational excellence, realizing fiscal stability, supporting additional institutional activity, increasing variety in areas other than SES, and recruiting specific talent (Hearn & Rosinger, 2014). One unintended consequence is that there has been a decrease in the number of affluent students at private four year institutions which undoubtedly explains the extreme financial burden that private four-year colleges have seemingly faced over the past years. That is, no-need students who would contribute tuition to institutions have gradually become scarce (Hearn & Rosinger, 2014) partially contributing to a decrease in net revenue at many institutions (Alstete, 2014).

Institutional Financial Characteristics and Student Borrowing

As aforementioned, US higher education institutions are different in financial terms such as; the amount of institutional aid allotted to students; how much state and other funds they can access; and their reliance on contributions from other sources such as alumni (Belfield, 2013). Private, not-for-profit institutions generally depend on tuition dollars, donations, and revenue from research although income from research is highly asymmetric unlike other revenue sources. Private institutions do not characteristically obtain regular subsidies for official operational costs from governments. Even though they are still subject to outside governance from accreditation agencies, legislative regulation, and the federal government (especially the guidelines of Title IV of the Higher Education Act that determine federal student financial aid eligibility), they mostly

face less external supervision than do public institutions (Denison, Fowles, & Moody, 2014). Institutional financial characteristics depending on whether the college is public, private not-for-profit, or private for-profit, could therefore influence changes in student borrowing. Institutional financial structures influence students' awareness of their individual financial circumstances, for example contentment with institutional tuition, and other charges, or apprehension about money problems. These fiscal elements may determine student borrowing, persistence, and outcomes in as far as they influence students' collective and educational assimilation into the institution (Kim, 2007).

Institutional financial characteristics have been linked to student borrowing in the literature. In his study, Monks (2014) considered the role of state aid policies, tuition, financial aid policy, and educational outcomes in influencing differences in average student debt. Results reveal that the determinants of student loan debt include; SAT scores, cost, state grant aid, admissions, and financial aid policies. Tuition substantially impacts student debt levels at private institutions, but state aid, institutional entrance and financial aid policies, completion rates, and majors equally influence institutional student debt intensities (Monks, 2014). His analysis however, does not consider the financial and enrollment characteristics of institutions and how they influence student borrowing. Also, the study does not indicate if the relationships between state aid policies, tuition, financial aid policy, as well as educational outcomes, and student loans are stable or change over time. Belfield (2013) analyzed the institutional factors that determine federal loan status among college students. He specifically analyzed how institutions influence student loan growth, payment, and/or failure to pay, which is jointly referred to as 'loan status.' Findings revealed differences in loan status at for profit colleges, and public and not-for-profit colleges. Students in for profit institutions tend to borrow more than those in public institutions.

Belfield (2013) concentrated on student loan default especially at for profit two year institutions. These findings may therefore not apply to four year institutions. My study hopes to fill some gaps in the literature by considering four year institutions over a period of time.

Overall, tuition and fees have been thought to substantially determine the dissimilarity in student borrowing intensities across institutions. However, exclusively blaming tuition rises for the upsurges in student borrowing fails to recognize the considerable part institutional financial structures, and financial aid policies play in influencing borrowing in higher education institutions (Monks, 2014). Kim (2007) acknowledged the existence of a dynamic interface between institutional features and a student's involvement in, and experience of, the institution. For instance, institutional financial elements may influence student choices including borrowing and persistence to completion. Using data from the Beginning Postsecondary Students survey, Kim (2007) examined the relationship between undergraduate student borrowing and degree attainment, and whether there are differences by student and institutional characteristics. Findings revealed that higher levels of debt were linked to low degree attainment among minority students. She suggested that the growing loan orientation may widen the income and educational gap between racial groups (Kim, 2007). This study did not consider aggregate student borrowing during the study period and it overgeneralizes the link between borrowing and degree attainment. My study hopes to fill this gap by using panel data to analyze aggregate borrowing at institutions.

Extenuating factors in the institutional environment may also influence changes in student borrowing. For instance, Belasco and colleagues (2014) investigated the patterns and predictors of borrowing among graduate students. Findings revealed that, individual and programmatic features are predictive of graduate student borrowing. The type of degree, age,

personal situations and race influence graduate debt. For instance, older, married, and part-time students accrued less debt for their advanced degrees overall (Belasco et al., 2014). Over and above concentrating on graduate students, this study observed debt levels only once for each NPSAS respondent, either in 2000 or 2008. The study is therefore limited in its ability to represent substantial variations in aggregate graduate debt which could be ascribed to fluctuating fiscal circumstances during the study period. My fixed effects analysis of panel data might fill this gap by identifying changes over time within institutions.

Institutional Enrollment Characteristics and Student Borrowing

Institutional characteristics are important in any analysis of student borrowing. Not only do they forecast tuition, but they demonstrate students' willingness to pay high charges (Taylor & Morphew, 2014), and even borrow if necessary. Enrollment features such as; institutional selectivity in the enrollment of students, and whether it is public or private determine how much students borrow (Kim, 2007). Institutions that recruit well-to-do students might have lower debt levels than those that admit less affluent students. Similarly, institutions that do not consider need in admissions, may have greater institutional grants and student debt, all else equal. Institutions that pledge to cover the demonstrated need of all enrolled students in its entirety register lesser student borrowing rates. Conversely, institutions that do not completely meet all of the verified need of their students with grants and loans might register intensified student borrowing (Monks, 2014). For instance, Hillman's (2014) study of what influences student loan debt default rates revealed several individual and institutional features logically associated with defaulting. These include the type of institution, degree attainment rates, social economic status, and employment.

Furthermore, institutions, especially privates have been accused of encouraging students to borrow to fund their education in a bid to recruit as many students as possible (Doyle, 2012; Razaki et al., 2014). Worth noting, however, is the fact that institutions do not inflict debt on unwilling students. Students make decisions to borrow for higher education basing on a cost benefit analysis of probable returns on their investment. Avery and Turner (2012) considered the extent of student borrowing, that is whether college students are borrowing too much or too little. They presented an analytic framework for defining how much a student would be prepared to borrow and how much that amount might change over time. They argued that the expected benefits from higher education have increased. This has equally amplified the investment value of a college degree and augmented student willingness to borrow to invest in higher education. Their paper however was not based on empirical data, it assumed that all college students were of the traditional college going age, and it seemed to down play the problem of student debt. Nevertheless, students who expect to complete and those who select majors in fields with projected greater salaries might readily borrow for education. In that case, institutions with higher attainment proportions and a great amount of degrees granted in profitable fields might have higher levels of aggregate student debt, holding all other factors constant (Kim, 2007; Monks, 2014).

Enrollment practices such as whether need is prominently considered, the extent to which need is met, how much borrowing is encouraged, and graduation rates also influence student borrowing (Craig, & Raisanen, 2014). Students are more likely to succeed in more selective institutions. Institutional selectivity is therefore positively correlated with student borrowing and degree attainment (Kim, 2007). Conversely, because of the emotional dimension of borrowing, students who attend less selective institutions especially those infamous for low achievement

rates, may have intensified aversion to borrowing for fear of defaulting (Dowd & Coury, 2006). More affluent institutions also offer students a more rewarding academic experience including plentiful social and economic resources that increase resilience and persistence. Using data from the 2011 Integrated Postsecondary Education Data System, and supplementary data on additional institutional characteristics such as locality and weather conditions, Craig and Raisanen (2014) examined institutional determinants of American undergraduate student debt. They found that students who attended institutions situated in the countryside, and students at institutions that demanded high standardized test scores on admission tests borrowed less. Similarly, part time students tended to borrow less than full time students probably because attending part time allowed them time to work more hours and afford to fund their education (Craig & Raisanen, 2014). Furthermore, students who attend privates or institutions that are not four year are likely to be from low socio-economic status and they tend to accumulate more debt (Dwyer, McCloud, & Hodson, 2012; Gross et al., 2009). Students at private institutions are inclined to borrow more than their colleagues at public institutions (Kim, 2007). Students who attend institutions with large endowments are likely to borrow less (Craig & Raisanen, 2014).

Conceptualizing Student Borrowing in the US

The beginning of students borrowing for higher education can be traced to the National Defense Student Loan (NDSL) program which was implemented as part of the National Defense Act in 1958. It was influenced by nationwide anxiety over Russia launching the first satellite. Thus, like most federal educational policies, the federal loan program resulted out of concerns that were far from educational (Hearn, 1998). Nevertheless, the NDSL marked the beginning of contemporary federal student aid for higher education. Initially, loans were viewed as auxiliary

financial aid aimed at enabling student choice and perseverance. Loans were not considered to be the principal aid (Hearn, 1998). The enactment of the Higher Education Act (HEA) of 1965 can be said to have been the stimulus for the growth of student loans. This bill, through Title IV of the act, created the Guaranteed Student Loan (GSL) program. The GSL program linked private capital with government aids of the interest rates and repayment terms, along with government guarantees against default. Since the authorization of the HEA, succeeding reauthorizations have progressively moved federal policy away from grants towards more dependence on student loans (Hearn & Holdsworth, 2004; Hillman, 2014). When loans were first introduced, the government paid the interest on these loans while the student attended college, loans were restricted to low-income students, and loan amount was only a third of grant volume. The Middle Income Student Assistance Act of 1978, made subsidized loans available to all undergraduates irrespective of need. This increased the amount of borrowing so much that the need prerequisite on subsidized loans was reestablished in 1981 to control the burgeoning expenses (Dynarski & Scott-Clayton, 2013).

Unsubsidized Stafford Loans were introduced in 1992. They are need blind and open to all students; the government does not pay the interest on these loans while students are enrolled, but "both subsidized and unsubsidized Stafford Loans offer interest rates, forbearance protections, and flexible repayment options that make them substantially more appealing than private student loans" (Dynarski & Scott-Clayton, 2013, p.73). Similar changes to the loan program over the years have led to a huge upsurge in loan volume. This undiminished evolution in student borrowing has persisted (Dynarski & Scott-Clayton, 2013). The use of student loan plans has therefore gradually and dramatically developed over time to an explosive extent ever since the 1950s, and specifically from the mid-1970s (Hearn, 1998; Hearn & Holdsworth, 2004).

Why student loans have enjoyed substantial attention in the literature is not hard to understand. Efforts to expand access to higher education have increased student dependence on loans to finance their education (Hillman, 2014). There are currently four major types of federal loans for higher education; the subsidized Stafford loans, unsubsidized Stafford loans, the Parent Loans for Undergraduates (PLUS) program, and the Perkins loans program (Avery & Turner, 2012). The growing public recognition of the benefits of higher education has led to increased demand for enrollment. This has been in a context of progressive financial austerity for private institutions characterized by inadequate funds for grants. Decreasing funding for higher education coupled with corresponding increases in enrollment, have prompted loan requirement and evolution (Hearn & Holdsworth, 2004). The growing use of loans as a form of student financial aid has also been fueled by federal regulations encouraging higher education affordability. For instance, the reauthorizations of the HEA in 1992, and 1998, respectively formed the unsubsidized Stafford Loan and raised the loan limits to promote affordability (Hearn & Holdsworth, 2004). This made borrowing easier; for instance, students can be given both subsidized and unsubsidized Stafford loans for the same enrollment period. Unfortunately, this also enables many students especially those from the average and higher income statuses to borrow over and above what they strictly require for educational expenses (Hearn & Holdsworth, 2004).

The importance of student loans as a form of financial aid has expanded over time becoming a central component of funding higher education worldwide. Nearly 66% of the students in US colleges and universities use credit to pay for higher education, and today's college graduates are likely to accrue more than $26,000 in educational debt (Hillman, 2014). Increased borrowing by students has caused public apprehension about possible future

repercussions. The concern is that overreliance on loans as a form of financial aid may reduce institutional choices, access, and accomplishment for debt averse students (Craig &Raisanen, 2014).

The Rationale for Student Loans for Higher Education

Federal student loan programs were originated and have been supported based on contrasting and sometimes contradictory rationales. From the social policy perspective, loans complement other forms of financial aid in promoting access to higher education for underprivileged but deserving students. From the economic policy point of view, not only do loans facilitate credit markets, they also promote the training of expert and flexible workers. This aids the employing of graduates into important professions with inadequate workers (Hearn & Holdsworth, 2004). Avery and Turner (2012) reiterated that student loans can help ensure adequate social investment in human capital thereby enhancing the productivity of the economy by increasing the number of college graduates in the labor market. In that way, student loans also lessen social stratification—variation in credentials and earnings in the community. Student loans have also been applauded for stimulating the growth of valuable fiscal and social responsibility. They boost the production of an industrious labor force and theoretically make graduates more committed to their society. Moreover, loans are more administratively practicable than other forms of aid because they can cater to the needs of diverse student populations. Loans enable the underprivileged to access higher education, and they provide flexibility to the average and upper income college aspirants (Hearn & Holdsworth, 2004).

Furthermore, student loans are based on the philosophy and strategy of cost-sharing. Cost sharing is a shift from private institutions exclusively relying on endowments and donations for

finances to parents and/or students paying tuition fees and/or "user charges" to cover some of the costs previously borne by institutions (Johnstone, 2005). Johnstone (2005) stressed that student loans are an indispensable component to any broad approach of cost sharing because they enable students to meet their expected contribution towards educational costs. The idea of tuition and user charges has existed for as long as universities have existed although in the beginning the charges were minimal. The charges arose from a recognition that singular sources of revenue were insufficient and the belief that students would take their education more seriously if there was a monetary value attached to it. Recently cost sharing has been backed by the neo—liberal economic argument of equity or fairness, that is, higher education bears both private and public benefits and therefore its cost should be proportionately shared (Johnstone, 2005; McMahon, 2009).

Higher education is increasingly being viewed as a private rather than public good with the result that national governments are withdrawing their noble obligation to wholly or partially meet the cost of education and subsistence for students. Students and/or their families therefore must bear most of their educational expenses (Heller, 2006). The acceptance of cost sharing as a policy presents the need for ways of deferring educational costs to the future. Then students would be presumably profitably employed because of their higher education and able to begin making payments. Accordingly, more countries have reverted to student loans to enhance cost sharing. Loan plans are intended to be both need-based and generally obtainable by all intellectually able students regardless of individual/ family income, credit-worthiness or students' employability and potential remuneration on graduation (Johnstone, 2005). In principle, borrowing complements revenue from parents, donors and taxpayers by providing substantial funds to facilitate the provision of higher education.

Proponents of cost sharing and resultant student borrowing argue that student loans were intended to supplement rather than replace institutional revenue from the conventional sources such as endowments and donations. The additional revenue can improve institutional excellence, increase capacity and hence participation and accessibility. It also enables students more variety and/or improved standards of living (Johnstone, 2005). In other words, in the absence of revenue from endowments, donations, taxpayers, or parents, the postponed or loaned out revenue of the students themselves enables institutional survival and success. From a student viewpoint, the availability of loans to cater for some or all higher education expenses empowers students to finance their individual future investments. In effect student loans have been described as a form of "do-it-yourself" student aid (McPherson & Schapiro, 1999). Indeed, in the higher education environment of financial austerity, there is limited or nonexistent government contribution for private institutions. This is coupled with limited or nonexistent parental contribution, and limited prospects for part-time work for some students. Therefore, it is borrowing that allows students to share in the high and escalating costs of higher education. For some students, borrowing or not borrowing may make the difference between participating and not participating in higher education (Johnstone, 2005).

The Effect of Student Loans

The growing loan orientation raises troubling educational, economic, and social implications. Increasing reliance on loans can be regarded as a transference of generational obligation for financing higher education. Previously, student financial aid was guided by the principle that parents had a responsibility of meeting a large percentage of their children's higher education expenses. That is why parental contribution features in need and eligibility

considerations for financial aid (Hearn & Holdsworth, 2004). Over time, students have assumed greater responsibility for their education, accumulating large amounts of debt in the process. Student loans are especially crucial where there is inadequate or no parental input. The absence of adequate parental support may be due to low household revenue, or parents might be disinclined to be responsible for extra monetary provision, or the student might wish to be financially independent. These reasons are common among older students and/or those pursuing advanced degrees (Johnstone, 2005). In any case, the absence of adequate parental contribution erodes the social pact of adults paying college expenses for the next generation. It also makes it implausible that the current generation can guarantee educational funding for their children. Student loans therefore raise concerns about the implications of breaking the ancient "intergenerational compact—the burden of paying for college across generations" (Hearn & Holdsworth, 2004, p.52). Moreover, because student loans must be reimbursed they intensify liabilities, reduce future prospects, and perpetuate the legacy of constraint for low income students (Dwyer et al., 2012; Hearn & Holdsworth, 2004). Far from eliminating disadvantage for low income students, loans simply postpone or augment it with a debt burden.

Theoretically, student loans provide additional revenue to higher education and they enhance institutional capacity, excellence, and student involvement (Johnstone, 2005). Loans enable students to enroll in different types of institutions and increase the probability of degree completion. Loans further provide students the luxury of making choices regarding aspects of their education such as which institution to attend, where to live, whether to live independently and whether to work full time, part time, or not all. In essence, student loans are "economic expressions of time preferences for money" (Johnstone, 2005; p.6). They represent great expectations of returns on students' investment in higher education. On the contrary, students

who avoid borrowing may handle their financial needs by studying part time or working many hours, which may affect their completion prospects (Craig & Raisanen, 2014; Dowd, 2008).

Borrowing for education may also diminish students' ambitions to attend college especially those students from low social economic status backgrounds who are likely to bear a greater repayment burden and default risk (Dowd, 2008). Therefore, loans do not influence access, persistence and attainment as much as grants due to debt aversion. Some students loathe owing money so much that although loans promise an investment with great profits, they will avoid them (Doyle, 2012). Students' career choices, enrollment and persistence choices are similarly subject to the possibility and extent of student debt. Decisions to join and persevere in college may be more favorably influenced by grants rather than loans (Dynarski & Scott-Clayton, 2013). Moreover, the pending debt burden influences students' decisions while at college and after graduation. For instance, students with debt may choose to major in career-oriented fields or to pursue more profitable jobs on graduation. Moreover, student loan debts may prevent students from some social pursuits accompanying maturity such as buying homes or getting married (Rothstein & Rouse, 2011).

Dowd and Coury (2006) examined the effect of loans on the persistence and attainment of community college students. Their findings revealed that loans can have mixed effects on student persistence. On the positive side, loans reduce the amount of money students need from assets, employment, and family, enabling students to enroll in college. Subsidized loans especially avail cash to students at lower interest rates such that students can finance their education and accrue returns on investment through higher salaries after graduation. In addition, individual and/or household incomes and educational ability were found to predict persistence. However, the chances of degree completion are low or approximate for many students who dread

a future possibility of defaulting on loans. Also, the benefits from investing in education may not be enough to compensate for the loss of financial safety and/or a meaningful life due to a debt burden. Moreover, borrowing goes against the educational values of economic freedom and self-sufficiency. Similarly, loans from diverse sources causes undesirable invasion into secure personal investments (Dowd & Coury, 2006). Therefore, although borrowing coupled with fewer hours of work for students enabling full time study looks like an ideal funding plan for student success (Dowd & Coury, 2006), loans generally bear more undesirable consequences due to the inner apprehension about future debt settlement. Students in colleges with low degree attainment rates are more prone to this loathing of debt (Nora, Barlow, & Crisp, 2006).

Furthermore, loan debt affects the students' college experience especially participation/involvement. A student's ability to participate in college and become incorporated in the school community is influenced by intellectual and emotional factors. Therefore, loans may have negative consequences due to constant worry about the prospect of loan reimbursement (Dowd, 2008). Loans additionally present a financial risk for students who may not succeed academically and may fail to pay. For example, students who never complete a degree do not realize a return on their investment in education because they carry no qualifications into the labor market. As students gauge their fitness for higher education and the projections for monetary yields after graduation, those with debt will probably become frustrated with their decision to go to college and pull out (Dowd and Coury, 2006). Dowd and Coury (2006) stress that "the decision to withdraw is affected by both a cognitive assessment of financial costs and potential future benefits, as well as an affective dissatisfaction with the risks of loan default" (p. 53).

The Personal and Social Impact of Student Loans after College

A survey carried out by the American Student Assistance (ASA) (2013) reported that, although loans enable students to afford a college education, in the aftermath they produce a class of indebted graduates who must work to free themselves from the bondage of educational debts or be metaphorically imprisoned in debt. This raises concerns such as whether and how the next generation can afford necessities for example a home or car if their disposable income is committed to paying off student loans. Many graduates today find themselves in a predicament of struggling to thrive in the labor market and the economy while bearing a heavy debt burden. The possibilities and prospects of a college degree are consequently overturned when students' financial futures are jeopardized by the strain of paying off a debt in an uncertain and shrinking economy (ASA, 2013). The irony is that student loans were invented to facilitate social mobility, but they could in effect limit graduates' capability to achieve financial accomplishment (ASA, 2013). Student loans have been said to influence the daily financial decisions of college graduates. Not only does debt limit purchasing authority, it makes people reluctant to make major life decisions necessitating financial investment and influencing career choices (ASA, 2013). Student loan debts may prevent students from some social pursuits accompanying maturity such as buying homes or getting married (Rothstein & Rouse, 2011).

Moreover, the pending debt burden influences students' decisions after graduation. For instance, given the current unemployment rates, college graduates are forced to put their career ambitions on hold and just do any job that will help them pay the bills. The choice is more pertinent for graduates with student debt; borrowers cannot afford to be selective when it comes to finding a job in the recovering labor market. Watson (2014), reiterates that because of high levels of indebtedness, many borrowers may postpone or completely fail to participate in

important life and economic ventures for instance, settling down, acquiring assets, and initiating profitable projects until they are less financially vulnerable. Student loan debt can be particularly shattering for college students who drop out of college without getting their degrees. Such students acquire considerable educational debts minus the monetary value of an extra educational qualification (Watson, 2014).

Loans therefore affect the career prospects of borrowers in several ways. Some of them must work two jobs to be able to meet the monthly loan repayment amounts. Sometimes graduates are forced to forego "employment opportunities that would not make enough money, regardless of the potential that they may have in the future" (ASA, 2013, p.5). Furthermore, loans make students take up higher paying jobs in the private sector to pay off their loans while avoiding lower paying civic jobs which would benefit the public. This constitutes a great career failure since students assume jobs just for money, and they may be forced to stick with unsatisfactory jobs for fear of being unable to meet their monthly loan repayments (ASA, 2013; Rothstein & Rouse, 2011). Rothstein and Rouse (2011) also noted that a high debt burden prevents graduates from pursuing low paying careers such as teaching. Craig and Raisanen (2014) reiterate that graduates with big debt obligations may decide on higher paying jobs than they would have chosen had they had less debt. Loans have also been said to lessen the probability of marriage and they also influence living conditions that is whether to live home with parents or become independent.

The Broader Impact of Student Loans

From a human capital perspective, any investment in higher education is based on the belief that a well-educated citizenry positively impacts a society even as it benefits individuals

(McMahon, 2009). Student loans are intended to facilitate more students to participate in higher education and afterwards improve society. Just as higher education bears both public and private benefits, the current student loan problem should equally be considered a public concern and not just a personal struggle facing individual borrowers in exchange for a college education. For instance, not only does the growing student loan debt cause inflation, it threatens the economic future and life choices of borrowers who are in fact the future leaders of our society. It is imperative to consider the actual cost of debt to borrowers and the collateral damage for the nation (ASA, 2013). Therefore, loans need to be used with an awareness of the effect of debt on the ability of graduates to holistically benefit from higher education and productively contribute to society (ASA, 2013). Student loans could be an indispensable liability in as far as they enable access to higher education to low income students and the fact that not all borrowers default on payments. Nevertheless, this 'good debt' still has some undesirable consequences which reduces its popularity after a cost benefit analysis. Education debt influences a borrower's ability to assume consumer debt, impacts their debt-to-income ratio, probably raises interest rates on consumer loans, and depresses their general expenditure (ASA, 2013).

Conclusion

Despite the growing orientation towards loans as a form of student financial aid, there is little research on the changes/trends in student borrowing and pending indebtedness especially at private not-for-profit colleges and universities. Existent research on how loans influence students' actions is relatively inadequate and mostly inconsistent (Dowd & Coury, 2006; Hillman, 2015). Nevertheless, evidence suggests that loans influence students' decisions. Generally, the literature suggests that accruing debt for education in itself is not solely a negative

situation because students acquire liability to improve their prospects for the future (Baum, 2015). What is negative, however, is the impact of borrowing on the choices students make. Such as, the institutions students attend and where they borrow influences their majors, career choices, and jobs upon completion. Student loans also become risky when students borrow more than the financier suggested amounts thereby exposing themselves to high default risks (Craig, & Raisanen, 2014). Moreover, the literature suggests that if loans do not satisfactorily decrease student costs to allow persistence and timely degree attainment, then students may fail to pay. It is problematic to discuss concerns of access, persistence, and completion in higher education without dealing with the essential challenge of higher education funding. Policymakers should therefore be interested in understanding changes in students' borrowing to finance their education. The impact of the growing student debt burden should be extensively analyzed before loans can be maintained as a prevailing financial aid policy for higher education students (Dowd & Coury, 2006). The changes in financial aid to emphasize loans may denote a marked loss of advantage for students, and a failure of the financial aid system to realize the objective of encouraging fairness in higher education entry (Dowd, 2004). Ehrenberg (2006) cautions that a failing of any higher education system in terms of quality and/or accessibility could severely affect the nation's future. The fundamental aim of student aid including loans should be to increase educational prospects for students suffering austere economic limitations. If student loans merely promote access without swelling admission rates, changing institutions, increasing success and achievement, then they are not achieving the goals of financial aid (Baum, McPherson, & Steele, 2008). There is also need for studies that consider student borrowing at private higher education institutions and address how distinct institutional characteristics influence student borrowing.

CHAPTER 3

DATA AND METHODS

Drawing on resource dependence theory, this study examined changes in student borrowing at private not-for-profit four year institutions to try and understand trends and their implications. Analytical focus was on the financial and enrollment characteristics of private not-for-profit four year institutions; the relationship between the financial and enrollment characteristics of private not-for-profit institutions and student loans; and whether these relationships are stable or change over time in response to the changing policy climate. In this chapter I discuss the data and methods of analysis.

Sample

This study only considered private not-for-profit four-year higher education institutions in the US based on the Carnegie Classification of 2005. Due to the distinctive financial circumstances and economic structures within which private not-for-profit institutions function, this study excluded all public and private for profit institutions. Private not-for-profit four year institutions are often highly tuition dependent and although some of them can access diverse revenues, their tuition charges tend to be greater than in public two year colleges and universities. The choice of private not-for-profit four year colleges and universities was also because of their importance in the American system of higher education. Policymakers use them to absorb demand for higher education; more than 60% of the degree awarding institutions in the US are private (Zumeta, 2011). Private institutions enroll more than one-third of all students and contribute to state and national research and economic development goals. The proneness of these institutions to fiscal and demographic oscillations similarly makes them critical players in

considerations of socioeconomic difficulties in higher education (Hearn & Rosinger, 2014). Furthermore, emphasis was placed on these institutions because higher education institutions in the US are funded differently. While public institutions are given direct subsidies by governments to counter balance student expenditures, only a small number of private not-for-profit institutions get direct government subsidies. Students at private institutions are likely to pay more than their counterparts at public institutions (Taylor &Morphew, 2014; Winston, 2004).

Private not-for-profit institutions were therefore considered to be appropriate for an analysis of student borrowing because many of these institutions require students to pay all, or nearly all, educational costs. In view of that, students at private not-for-profit institutions faced with a greater percentage of tuition and other related educational expenses (Taylor &Morphew, 2014) may be forced to borrow to cover those expenses. Furthermore, despite the uproar about tuition increases at private institutions, at some institutions there are more available spaces than the number of students able/or willing to pay the posted tuition prices. Because of this limited demand, private not-for-profit institutions must be ingenious in their pricing and use of financial aid in order to attract students (Breneman, 1996). Part of that ingenuity may entail some institutions or their agents advising or sanctioning students to take on debt to pay for courses without sufficiently considering the students' ability to repay the credit (Belfield, 2013; Fowles, 2014). The sample for this study was selected depending on how institutions responded to the IPEDS survey question "institutional control." Institutions that indicated their institutional control to be "private, non-profit" were sampled. Institution that offer four years' programs at or above the baccalaureate level, plus colleges that merely offer post baccalaureate certificates or

those that offer graduate programs were included in the sample. Aggregate borrowing was analyzed from 2004 to 2013.

Data

Data for this study came from the Delta Cost project database and the National Association of College and University Business Officers (NACUBO). The Delta Cost Project Database is a longitudinal databank developed from the Integrated Postsecondary Education Data System (IPEDS) surveys on finance, enrollment, staffing, completions, and student aid for academic years 1986-87 through 2012-13. These data have been converted to analytical formats to allow for longitudinal analyses of trends in postsecondary education with a focus on revenues and expenditures. It has a total of 221,957 observations and 1,012 variables derived from the institutional characteristics, finance, enrollment, completions, graduation rates, student financial aid, and human resources IPEDS survey components and a limited number of outside sources (Desrochers, Hurlburt, & Sun, 2015; Jaquette & Parra, 2014). Data provided by the Delta Cost Project contains several independent, institution level variables that portray how institutions obtain income or that impact prices and/or debt their students incur (Belasco et al., 2014). NACUBO is a membership organization representing more than 2,100 colleges and universities across the country. The NACUBO-Common Fund Study of Endowments analyzes return data and a broad range of related information gathered from U.S. colleges and universities, both public and private, along with their supporting foundations.

Variables

The dependent variable used in my analyses was the cumulative amount borrowed per

institution per Full Time Enrollment (FTE). This included all federal and private institutional loans for all the years of study. Because of the fixed effects approach, my aim was to highlight trends in student borrowing over time rather than simply identify institutions where students borrowed more or less. From RDT, the aggregate loan amount was assumed to be a function of financial austerity at private institutions leading to great tuition dependence. The independent variables of interest were therefore the financial and enrollment characteristics of institutions. I considered FTE, indicators of student characteristics such as the percentage of students receiving federal and state grants, enrollment status, admission selectivity, and financial characteristics such as endowments. The hierarchy of institutions from the well off to the less affluent has implications on costs, prices, subsidies, and competition for students and resources. The hierarchy of institutions further depends on how much wealth the institutions have accumulated over time and their current financial health (Winston, 1999). Institutional financial characteristics were therefore analyzed with specific emphasis on revenue sources including net tuition, donations, and other contributions.

In addition, admission selectivity influences student willingness to pay tuition and probably borrow to do so. Indeed, high tuition may signify status (McPherson & Winston, 1993; Weisbrod et al., 2008) and it may make students willing to borrow to acquire that desirable education. In the stratified and competitive higher education environment, the degree has prestige and exchange value. Therefore, tuition, the proportion of enrolled students, average student subsidy, and the average cost of a student's education minus tuition and fees were also analyzed. The social economic status of students at an institution is believed to affect the aggregate student borrowing at that institution. For instance, institutions that enroll well off students supposedly have lower levels of student borrowing than those that sign on

disadvantaged students (Monks, 2014). It was therefore important to include the share of an institution's enrollment drawn from low-income households. This would corroborate the suggestion that the weight of rising tuition and the attendant student loan burden might be falling excessively on those students who are most unable to bear it (Taylor & Morphew, 2014). A range of measures of student socio-economic characteristics such as household income and dependency status should have been included. However, the Delta Cost Project database stopped recording such data in 2008 and including those measures would result in the loss of all data from 2009 to 2013. Instead of losing half of my sample, these characteristics were measured in a less straightforward manner. I considered the percentage of students who received federal and state grants. This was thought to be an indicator of socio-economic states because to be eligible for grants, students are typically required to meet requirements on income, assets and occasionally high school Grade Point Average. Federal financial aid policies described under Title IV of the Higher Education Act also differentiate between "dependent" and "independent" students to determine eligibility. For dependent students, needs analysis considers the student's ability to pay and that of their parents. For independent students, eligibility depends on the financial position of the candidate and their spouse, proportionate to direct college costs and other demands on resources, as well as family size (Gordon, 2004). This suggests that students who receive grants have somehow satisfied the need requirement.

Analytic Strategy

Descriptive statistics were used to answer research question one. Because I was interested in changes in student borrowing over time, this study also implemented a fixed effects regression analysis of panel data to answer questions two and three. A fixed effects analysis of panel data

was statistically appealing in that it would enable control for unobserved individual heterogeneity (Zhang, 2010). It was in addition conceptually attractive because it would highlight within unit variation, in this case, gradual variations in student borrowing for each institution over the study period (Zhang, 2010). The investigative approach therefore involved analyzing multiple observations of the same institution at different points in time. Focus was on within institution variation. I considered how much each observation differed from the average for that institution. Examining the extent of student borrowing within each institution, over a period, would enable me to determine whether there had been changes in student borrowing during the period under study. Such an approach was suitable to this study's theoretical perspective, which considered changes in student borrowing over time. Analyzing panel data would lead to robust inferences (Zhang, 2010). Zhang (2010) confirms that conclusions made after analyzing variations within individual institutions may more appropriately and meaningfully influence policy decisions.

A fixed effects regression model would also enable me to account for variables that were not or could not be measured, thereby reducing the effect of endogeneity /omitted variable bias (Allison, 2009). A fixed effects method was rigorous because it enabled control for time-invariant institutional level features. In other words, fixed/stable aspects of institutions such as their geographical location were included in the analysis although they did not appear as independent variables (Allison, 2009; Taylor &Morphew, 2014). Furthermore, there might be unnoticed time specific dynamics that impact all institutions in the same period. This time effect was important in my analysis because my data covered a period from 2003 to 2013. Year-to-year financial ebbs and flows such as the "Great Recession" could have impacted institutional revenue sources, which could in turn influence tuition charges and/or resultant student

borrowing. To account for this time drift, a second error element varying with time but consistent within institutions was factored in. The Stata software package was used to analyze data.

Limitations

This study had several limitations which were considered during data analysis and interpretation. First, fixed effects models are prone to false negatives or type II errors. For instance, the evaluations may yield large standard errors leading to bigger P values and confidence intervals (Allison, 2009; Zhang, 2010). Secondly, this study could lead to the "ecological" fallacy. Because I included student demographic characteristics in the analysis, findings may seem to represent student borrowing for individual students. On the contrary, my analysis focused on collective student borrowing at each institution rather than individual student borrowing. As a result, I restricted my interpretations to the institutions instead of the students at these institutions. In addition, this study was based on secondary data; the analysis was therefore restricted to only those variables included in the Delta Cost Project dataset and NACUBO. It is also possible that, in some cases, the dependent variable did not cover all the borrowing students did, for example, money borrowed from family or friends; information about private loans was self-reported. Furthermore, my study focused on private not-for-profit four year institutions in the US. The findings may not be generalizable to all higher education institutions. However, focusing on private not-for-profit institutions provided robust and fundamental inferences about these institutions. This could powerfully link conclusions and recommendations to what takes place in private not-for-profit institutions.

CHAPTER 4

RESULTS

Drawing on resource dependence theory (RDT), this study examined changes in student borrowing at private not-for-profit four-year institutions. Analytical focus was on the financial and enrollment characteristics of private not-for-profit four-year institutions, the relationship between the financial and enrollment characteristics of private not-for-profit institutions and student loans, and whether these relationships are stable or change over time. In this chapter, I present results from the data analysis.

Description of the Sample and Data

This study only considered private not-for-profit four-year higher education institutions in the US based on the Carnegie Classification of 2005. Aggregate borrowing was analyzed from 2004 to 2013. My sample begins in 2004 because student loan debt has been steadily rising since the early 2000s. Data for this study came from the Delta Cost Project database and the National Association of College and University Business Officers (NACUBO). Because these data had been standardized, I conducted minimal variable transformations. Secondly, because the Delta dataset did not include endowment data for all institutions for all the years of study, I included data collected by NACUBO on institutional endowments.

Table 1 defines all variables used in my analysis. The dependent variable was the average student loan amount. Each of the independent variables is linked to my theoretical framework, RDT. Among financial characteristics, tuition represents the major source of revenue at private not-for-profit institutions. The share of education and related expenses covered by net tuition revenue highlights tuition dependence. Endowment data are important in explaining causes of

sticker price tuition inflation at private not-for-profit institutions. Tuition discount is important in reflecting the extent to which private not-for-profit institutions can subsidize the cost of education for their students. Other revenue sources demonstrate how changes in revenues may predict changes in student borrowing. Institutional enrolment characteristics include admission selectivity, Full-Time Equivalency (FTE) enrolment, Squared FTE and the percentage of students who receive federal and state grants.

Table 1

Variable Definitions and Sources

Variable Group	Variable Name	Variable Description	Unit of Measurement	Variable Source
Dependent variable	Student loans	Average amount of student loans received by full-time first-time degree/certificate-seeking undergraduates	$000	Delta Project
Financial characteristics	Net student tuition	Net tuition revenue coming directly from students (not including Pell, Federal, State, and Local grants).	$000	Delta Project
Financial characteristics	Tuition Reliance	Share of operating revenues from net tuition (includes basic revenue streams)	%	Delta Project
Financial characteristics	Endowments/FTE	Assets at the end of the fiscal year. Consists of gross investments of endowment funds, term endowment funds and funds functioning as endowment for the institution and any of its foundations and other affiliated organizations.	$000	NACUBO
Financial characteristics	Tuition discount	Average student subsidy, i.e. student financial aid that is used to cover educational and related expenses	%	Delta Project
Financial characteristics	Other revenue sources	Revenue from private gifts, grants, and contracts	$000	Delta Project
Financial characteristics	Total revenues	Total current funds revenues	$000	Delta Project
Enrollment characteristics	Full-time equivalency (FTE)	FTE enrollment	FTE count	Delta Project
Enrollment characteristics	Percentage admitted	Percentage of applicants admitted	%	Delta Project
Students' socio-economic characteristics	Federal grant percentage	Percentage of students receiving Federal grants	%	Delta Project
Students' socio-economic characteristics	State grant percentage	Percentage of students receiving State grants	%	Delta Project

Analysis of Student Borrowing

Before presenting data on the research questions, I briefly analyze the dependent variable, the average amount of student loans received by full time students. RDT suggests that student borrowing might be suggestive of the characteristics of the institutions students attend. It proposes that contextual forces such as the institution's financial condition, endowments and the availability of diverse revenue sources on top of tuition influence student borrowing. Borrowing is influenced by actions, opportunities, and other extenuating factors within the institutional environments. Therefore, it was imperative to examine changes in student borrowing within the wider context of institutional environments, and to examine environmental relations and influences as determinants of student borrowing (Tolbert, 1985). This is especially so because institutions are communal units set in, and influenced by, constraining dynamics in the external policy environment (Altbach et al., 2005).

Table 2

10 Year Trend in Average Student Borrowing at Private Not-for-Profit Institutions in the US

Year	Mean	Std. Dev.	Freq.
2004	5668.0279	2026.0345	424
2005	5811.4891	2051.8589	424
2006	5838.2518	2216.0226	424
2007	6040.693	2310.9581	426
2008	6799.7207	2091.6398	426
2009	7908.2464	2231.4099	427
2011	7400.5106	1794.1263	426
2012	7456.7646	1720.1624	427
2013	7686.8224	1634.7541	428
5-year change (2004-2008) = 16.6%			
10-year change (2004-2013) =26.3%			

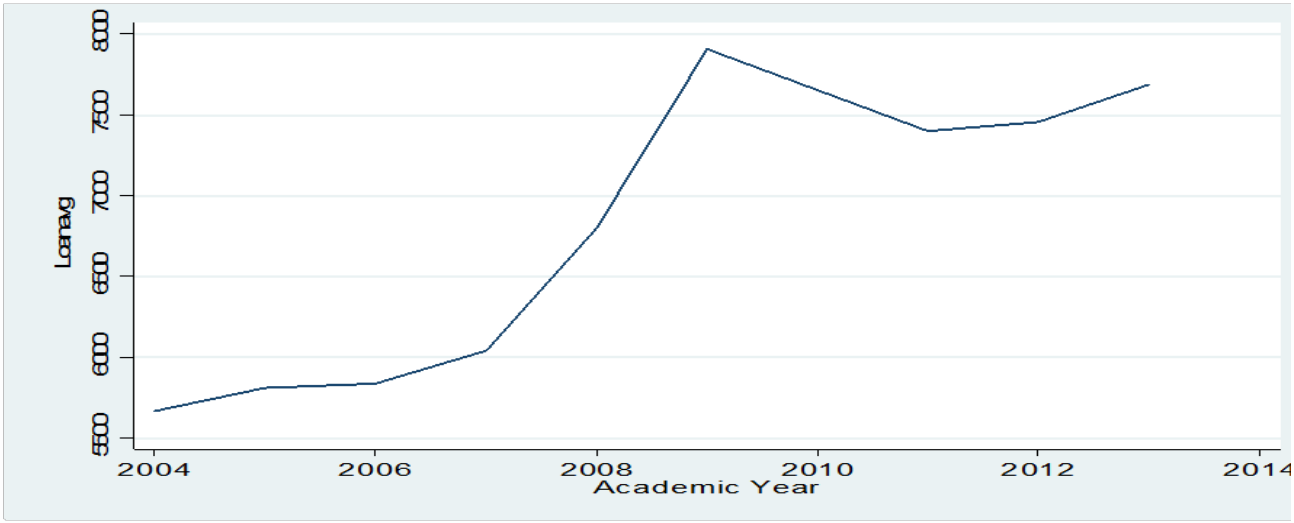

Figure 1. 10 year trend in average student borrowing at private not-for-profit institutions in the US.

The following data on student loans has been adjusted for inflation and shown in 2013 constant dollars per FTE. Table 2 and Figure 1 report changes in student borrowing represented by the mean average loan amounts from 2004 to 2013. As indicated, the average loan amount per student increased by about $2018 in constant dollars over this period. The percentage change in student borrowing over a five-year period was 16.6% and 26.3% over ten years. The results affirm that student loans have become a dominant part of financing private higher education in the U.S. Changes in higher education tuition and loan policy have moved more students to borrow and have also increased the amount of debt students acquire for higher education.

Research Question 1: What are the Financial and Enrollment Characteristics of Private Not-for-Profit Four Year Institutions in the US?

Financial Characteristics

An analysis of financial characteristics was necessary because private not-for-profit institutions, especially the small ones, may not have large endowments and do not receive direct government subsidies, often making them highly tuition dependent (Breneman,1994). The results

highlight trends in the institutional financial and enrollment characteristics of private not-for-profit institutions between 2004 and 2013. The data on financial characteristics were adjusted for inflation and shown in 2013 constant dollars. I track 5 years and 10 years changes. I break it up like this because of the Recession.

The data reveal that there has been a general variation in the financial and enrollment characteristics of private not-for-profit institutions over the past ten years. However, the variation has been mostly incremental. Table 3 and Figure 2 report changes in net student tuition represented by the mean student tuition from 2004 to 2013. As indicated, tuition per student increased by about $2378 per FTE in constant dollars over this period. There was an 8.88% increase in tuition between 2004 and 2008, and a 14% increase between 2004 and 2013. Correspondingly, the average loan amount per student increased by 16.6% between 2004 and 2008, and 26.3% between 2004 and 2013 per FTE in constant dollars. In other words, loan average exceeded growth in tuition per student over this period.

This is not surprising because in many private institutions, tuition is the greatest recognizable source of funding. From a resource dependence perspective, the increased dependence on tuition at private colleges and universities can explain the corresponding amounts and extent of student loans. Tuition increases have been said to increase the demand for loans (Lucca et al., 2015). Institutions have been thought to increase their tuition charges to secure the increasing sums of federal financial aid that have been made available especially through loans (Belasco et al., 2014; Heller, 2013). As tuition becomes a key source of income for institutions, institutions may increase charges to take full advantage of tuition revenue which in turn may cause more students to borrow to afford higher education. This raises concerns about striking the right balance between the demand and cost of higher education.

Table 3

10 Year Trend in Average Tuition at Private Not-for-Profit Institutions in the US

Academic Year	Mean	Std. Dev.	Freq.
2004	15179.98	6662.4969	449
2005	15652.044	6809.1082	449
2006	16276.136	9780.5061	449
2007	16403.063	7274.1147	449
2008	16658.868	7225.7769	449
2009	17103.024	7364.7878	450
2010	17043.136	7380.7132	450
2011	17058.106	7437.7448	450
2012	17328.451	7471.6634	450
2013	17557.698	7698.2649	450
5-year change (2004-2008) = 8.88%			
10-year change (2004-2013) =14%			

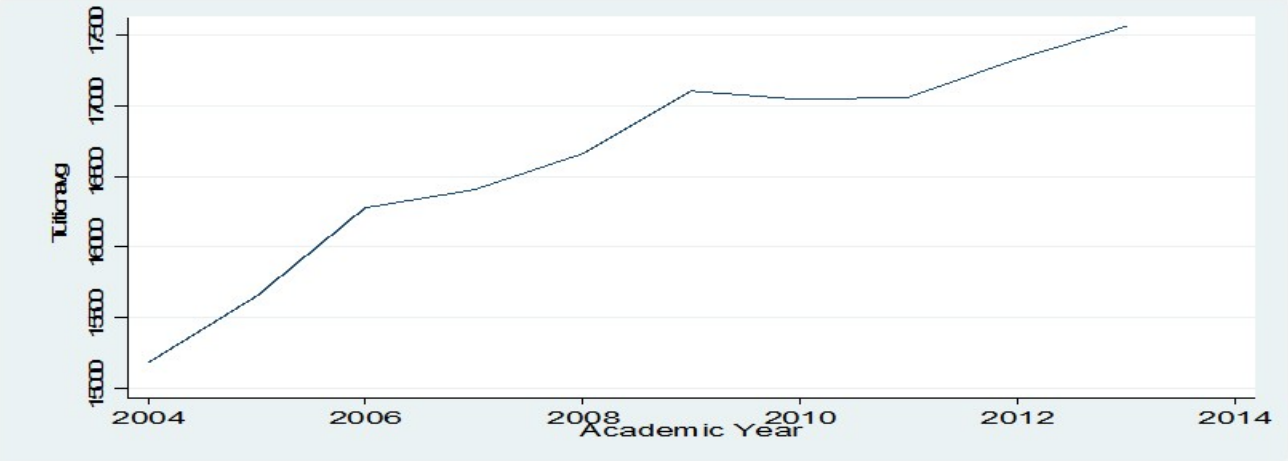

Figure 2. 10 year trend in average tuition at private not-for-profit institutions in the US.

RDT further suggests that student borrowing might be influenced by the financial structures and condition of the institutions students attend. It was therefore important to analyze trends in endowment funds to establish if there had been a parallel increase in institutional assets. The average endowment fund increased by approximately $23 million in constant dollars (see Table 4 and Figure 3). The percentage increase in endowment between 2004 and 2008 was 19.5%

and 15.3% between 2004 and 2013. This denotes variability in endowment funds during the study period. Not surprisingly, the results show tuition upsurges and increases in loan average during the period institutional endowment funds reduced, that is, in the years 2009 and 2010. RDT suggests that institutions face challenges and vulnerability when resources decline and must be sought from altered and diverse sources (Jaeger & Thornton, 2005). Endowments are durable assets intended to sustain the institutional mission into the future in times of crisis. If funding from endowments decline, tuition becomes the major revenue source. This could increase loan amounts because affluent institutions with big endowments and diverse revenue sources on top of tuition may be able to provide scholarships and grants to their students. Less wealthy institutions may not be able to offer similar privileges to their students. Hence students who attend well-endowed institutions would expect their loan average to reduce while the reverse is true for students who attend less affluent institutions.

Table 4

10 Year Trend in Endowments (in 000s) at Private Not-for-Profit Institutions in the US

Year	Mean	Std. Dev.	Freq.
2004	128151.11	501000.82	450
2005	134716.86	501026.69	451
2006	146593.98	534980.94	451
2007	169099.85	632746.41	451
2008	159290.01	580045.34	451
2009	123135.9	419881.42	451
2010	128796.98	415782.32	451
2011	146851.07	500018.41	451
2012	139822.84	447079.8	451
2013	151286.17	491536.67	451
5-year change (2004-2008) = 19.5 %			
10-year change (2004-2013) =15.3%			

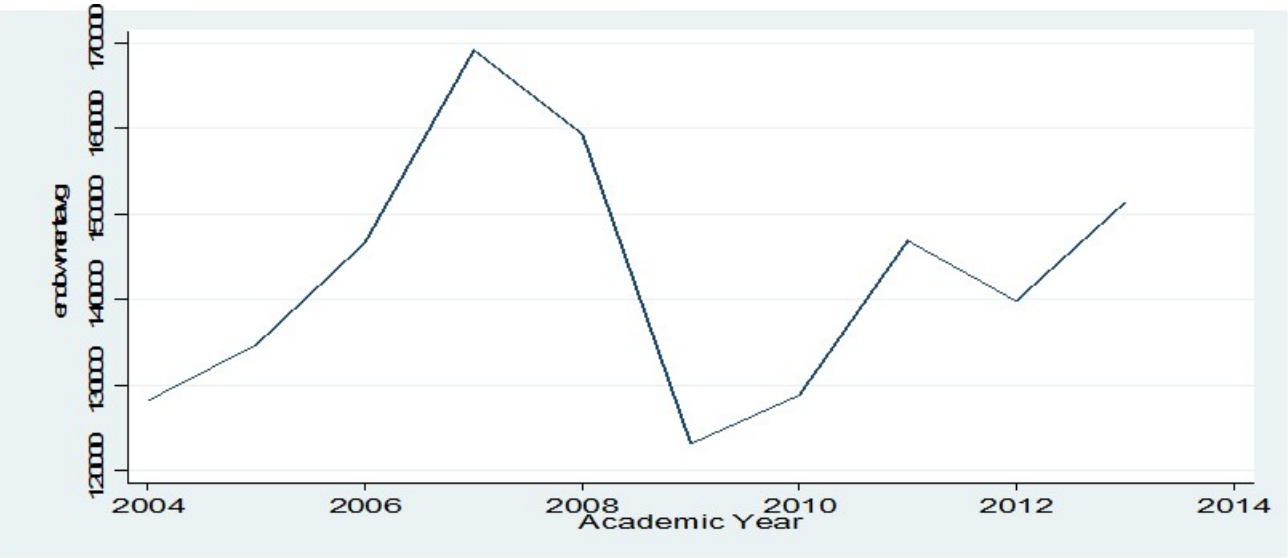

Figure 3. 10 year trend in endowments at private not-for-profit institutions in the US.

Private not-for-profit institutions rely on donations (charities, gifts, grants from individuals, and corporate gifts) for income (Weisbrod et al., 2008). It was therefore important to highlight trends in donations and other gifts over the study period. Table 5 and Figure 4 indicate an increase of 13% in private gifts between 2004 and 2008. However, there was a 2% decrease between 2009 and 2013. This might be because of the Great Recession. According to RDT, a decline in revenue sources may cause institutions to seek to meet the balance from tuition paying students (Archibald & Feldman, 2010). Consequently, when other revenue sources decrease there is often an increase in tuition and loan amount.

Table 5

Trends in Private Gifts at Private Not-for-Profit Institutions in the US

Academic Year	Mean	Std. Dev.	Freq.
2004	8691.5081	22530.342	450
2005	10023.492	50090.801	450
2006	9918.4015	33971.723	450
2007	10835.503	39276.781	450
2008	9958.4861	29147.742	450

(table continues)

Academic Year	Mean	Std. Dev.	Freq.
2009	7792.48	24150.028	448
2010	7337.8275	19822.871	449
2011	8020.5926	21378.527	449
2012	8751.6935	32970.785	450
2013	8552.2655	27120.709	449
5-year change (2004-2008) = 13%			
10-year change (2004-2013) =-2%			

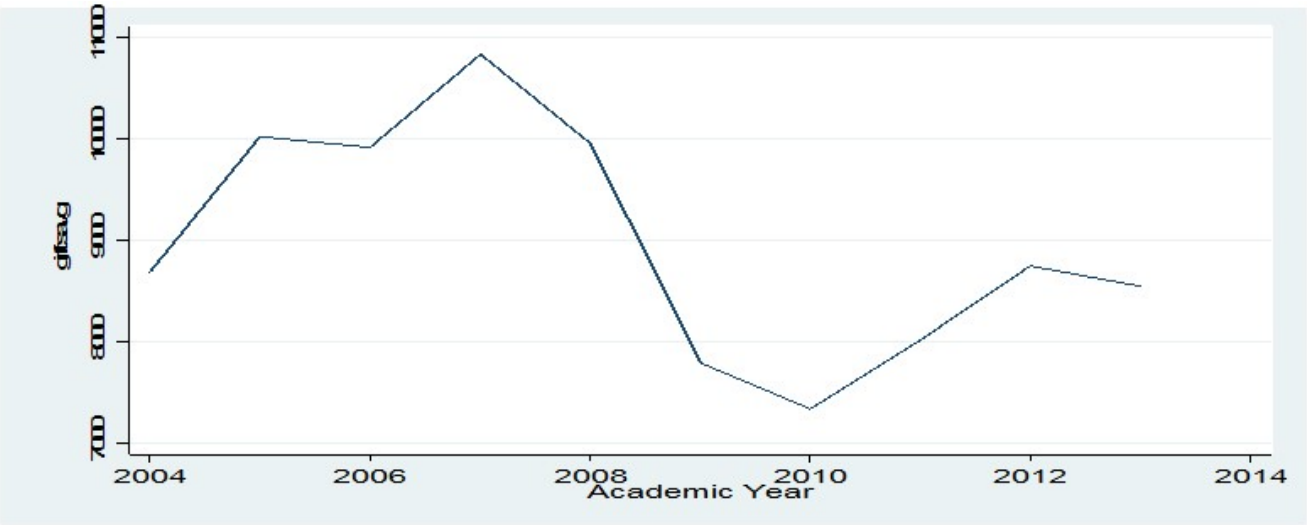

Figure 4. 10 year trend in private gifts at private not-for-profit institutions in the US.

With students being perceived as a revenue source, institutions employ admission and revenue management schemes, for instance tuition discounting, to enroll as many students as possible and make the most of tuition dollars (Hillman, 2012). Therefore, an analysis of tuition discount was in order. Table 6 and Figure 5 show that tuition discounts at private not-for-profit institutions increased by 3.96% over a period of 5 years and by 16.8% in ten years. The increase in tuition discount corresponds with the increase in tuition and loan average. This could be because although private institutions support students through tuition discounts, they equally depend on students to produce tuition revenue, and on tuition to generate aid. Institutions therefore purposely exploit students' willingness and ability to pay tuition. They tactfully

manipulate tuition discounts to facilitate enrollment of students and increase institutional income (Davis, 2013; Hillman, 2012).

Table 6

10 Year Trend in Tuition Discount at Private Not-for-Profit Institutions in the US

Academic Year	Mean	Std. Dev.	Freq.
2004	31.48136	14.157086	448
2005	31.657827	14.096817	448
2006	31.933483	14.380837	448
2007	32.549166	13.906741	448
2008	32.891809	13.774346	447
2009	33.778681	14.196408	448
2010	34.886977	13.856581	448
2011	36.003215	14.268504	448
2012	36.864679	14.290401	448
2013	37.944399	14.968656	448
5-year change (2004-2008) = 3.96%			
10-year change (2004-2013) = 16.8%			

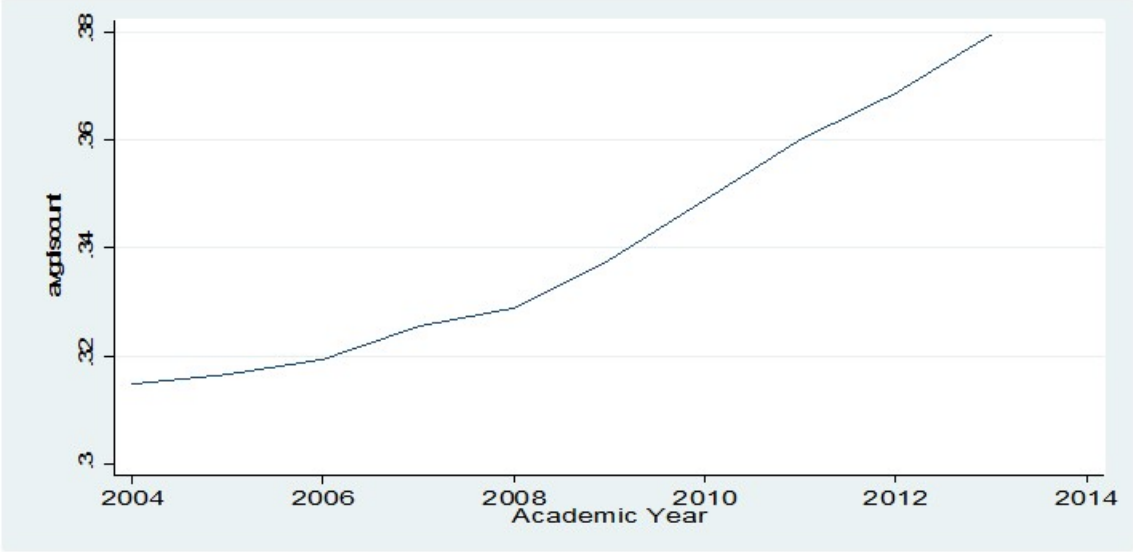

Figure 5. 10 year trend in tuition discount at private not-for-profit institutions in the US.

Private not-for-profit institutions often are highly tuition dependent (Breneman, 1994). The proportion of tuition reliance was analyzed to establish whether it was declining or

increasing and how it related to other financial variables. Findings indicate that tuition reliance has gradually been increasing at private not-for-profit institutions. There was an increase of approximately 2% between 2004 and 2008, and of about 7% over the ten year study period (Table 7 and Figure 6). These percentages are noteworthy in the context of private not-for-profit institutions. In view of the maximum possible increase in tuition reliance, these percentages indicate that institutions are increasingly relying on tuition dollars. The increased reliance on tuition has significantly increased student borrowing at private colleges and universities (Lucca et al., 2015). Increasing tuition reliance means that the cost of private higher education is being borne more and more by students and their families. This has increased the demand for loans. As tuition turns out to be the foremost source of revenue for institutions, tuition charges increase, and students must borrow to fund their expected contributions to educational costs (Hearn, 1998; Project on Student Debt, 2011; Doyle, 2012).

Table 7

10 Year Trend in Tuition Reliance at Private Not-for-Profit Institutions in the US

Year	Mean	Std. Dev.	Freq.
2004	67.937115	20.788242	449
2005	68.920654	20.691422	449
2006	68.470629	20.790917	449
2007	68.056875	21.300266	449
2008	69.13961	20.735787	449
2009	72.985574	20.47095	450
2010	73.519899	20.542553	450
2011	72.719084	20.940762	450
2012	73.243906	20.68736	450
2013	72.996815	21.562753	450
5-year change (2004-2008) = 1.71%			
10-year change (2004-2013) = 6.98%			

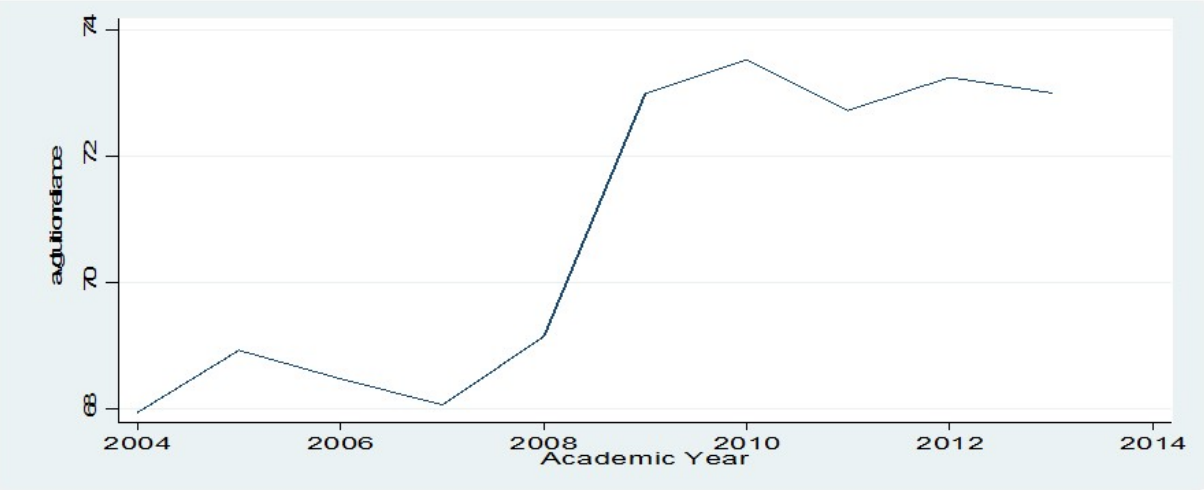

Figure 6. 10 year trend in the average tuition reliance at private not-for-profit institutions in the US.

For private institutions of higher education revenue is both essential and vital (Weisbrod et al., 2008). Total institutional revenue was therefore analyzed to establish how it relates to other characteristics. Results show that total revenue declined by 28.4% between 2004 and 2008. The percentage change in total revenue over the 10 year study period was 8.76% in constant dollars. RDT suggests that such uncertainty or variability concerning a critical resource threatens the existence of institutions. A constant flow of resources is required for institutional survival, and present resources must be fully exploited and maintained (Carroll & Stater, 2009; Jaeger & Thornton, 2005; Rhoades & Slaughter, 2004). Table 8 shows that institutional revenue grossly reduced in 2008 and 2009 in the wake of the recession. This suggests that many institutions had almost no revenue. It is therefore not surprising that tuition and loan amounts increased as total revenue decreased. In the face of financial challenges, revenue diversification is the most probable institutional response. Private not-for-profit institutions typically respond to fiscal pressures by struggling to raise income from tuition (Jaquette, & Curs, 2015).

Table 8

10 Year Trend in Total Revenue (in 000s) at Private Not-for-Profit Institutions in the US

Year	Mean	Std. Dev.	Freq.
2004	61838.336	103102.44	450
2005	65042.822	171834.54	450
2006	69132.377	173493.11	450
2007	81479.307	218406.84	450
2008	48178.806	83002.302	450
2009	17280.159	100199.35	451
2010	61647.355	112618.48	451
2011	74758.193	159914.93	451
2012	49371.222	90793.948	451
2013	67776.537	145043.61	451
5-year change (2004-2008) = -28.4%			
10-year change (2004-2013) = 8.76%			

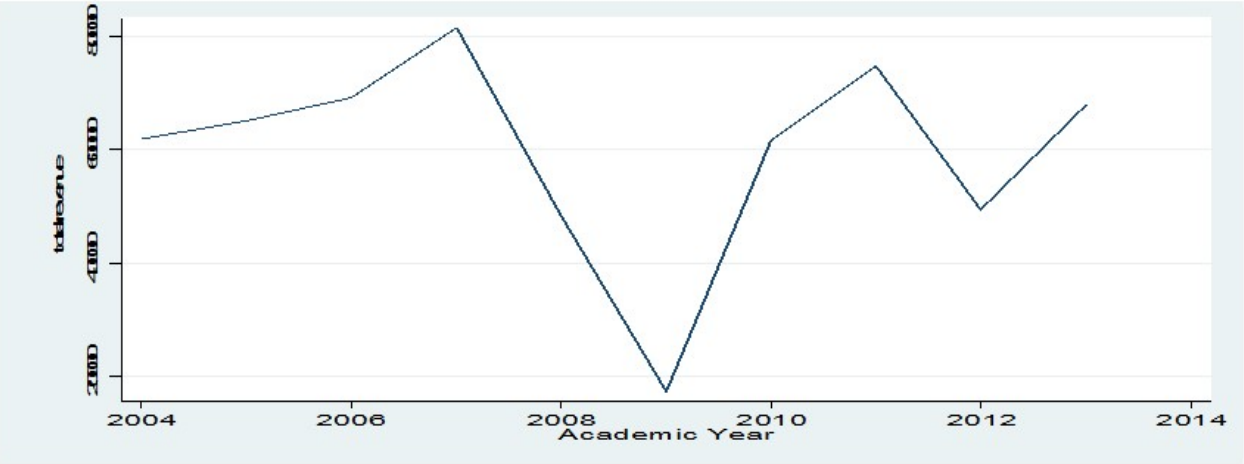

Figure 7. 10 year trend in the average total revenue at private not-for-profit institutions in the US.

Enrollment Characteristics

Institutions especially privates have been suspected of encouraging students to borrow in a bid to recruit as many students as possible (Razaki et al., 2014). It was therefore imperative to

analyze several enrollment characteristics. Table 9 and Figure 8 reveal an increase in student enrollments. Total FTE student enrollment increased by 5.5% in five years and 11.1% in ten years. The number of enrollments gradually rises until 2011 when it starts reducing. The results indicate that demand for private higher education in the U.S. has been increasing with time. But when this result is considered in relation to institutional finances, it shows that far from lessening the strain on financial resources as might be expected in a fast growing industry with many paying customers, increased enrollment increases financial burdens (Alstete, 2014). For instance, the growth in enrollments may increase students' demands and expectations of expanded and upgraded facilities. This coupled with a lack of matching increases in operational income (Alstete, 2014), may cause institutions to charge more tuition, and students to borrow more.

Table 9

10 Year Trend in FTE Student Enrollment at Private Not-for-Profit Institutions in the US

Year	Mean	Std. Dev.	Freq.
2004	3610.8129	4199.091	451
2005	3677.3806	4272.958	451
2006	3726.9275	4347.9379	451
2007	3762.5464	4385.8286	451
2008	3819.8097	4459.9291	451
2009	3859.3723	4499.6015	451
2010	3945.385	4626.8347	451
2011	4034.2151	4768.4186	451
2012	4049.1247	4814.5961	451
2013	4060.5588	4884.3669	451
5-year change (2004-2008) = 5.5%			
10-year change (2004-2013) = 11.1%			

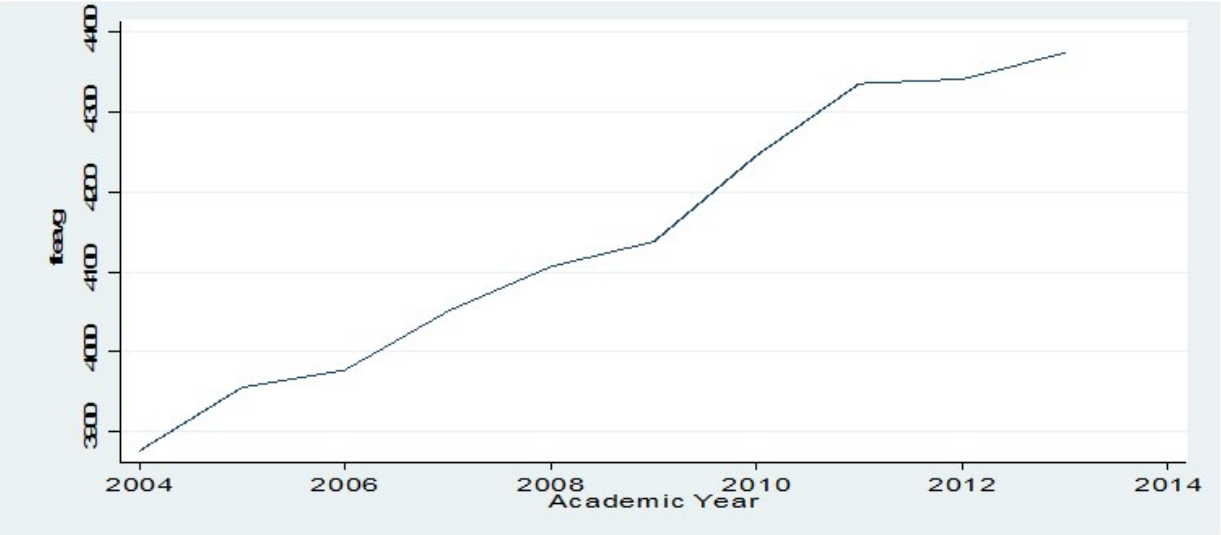

Figure 8. 10 year trend in the total FTE student enrollment at private not-for-profit institutions in the US.

The demand for private higher education in the U.S. has increased over time leading to many private institutions. The increasing demand is reflected by the total number of applicants. The number of applicants at private not-for-profit institutions in this study increased by 22% between 2004 and 2008, and 42% between 2004 and 2013 (see Table 11 and Figure 10). However, not all the students who apply are admitted. In fact, more than half of the applicants in the study institutions were not admitted. Table 12 and Figure 11 reveal a gradual increase in the total number of admissions at private not-for-profit institutions in the US during the study period. The total number of admissions increased by 13% between 2004 and 2008, and by 33% between 2004 and 2013. However, Table 13 indicates a reduction in the percentage of applicants admitted. The percentage of students admitted reduced by 9.3% between 2004 and 2008, and by 13.4% between 2004 and 2013. This indicates that institutions are becoming more selective. How selective an institution is in its enrollment of students determines borrowing intensities. Institutional selectivity has been positively correlated with student borrowing and degree attainment (Kim, 2007). Institutional selectivity may imply value (Weisbrod et al., 2008;

McPherson, & Winston, 1993) and it may make students willing to borrow to attend reputable institutions.

Table 10

10 Year Summary of the Total Number of Applicants at Private Not-for-Profit Institutions in the US

Academic Year	Mean	Std. Dev.	Freq.
2004	3706.3762	4453.1079	420
2005	3910.5175	4640.5204	419
2006	4108.9549	4907.9126	420
2007	4437.5986	5330.3239	421
2008	4732.6825	5595.6595	422
2009	5067.8979	6133.7488	421
2010	5336.4826	6620.7129	423
2011	5776.1681	7217.8402	421
2012	6188.7143	7657.3086	420
2013	6375.5534	7841.8691	421
5-year change (2004-2008) = 22%			
10-year change (2004-2013) = 42%			

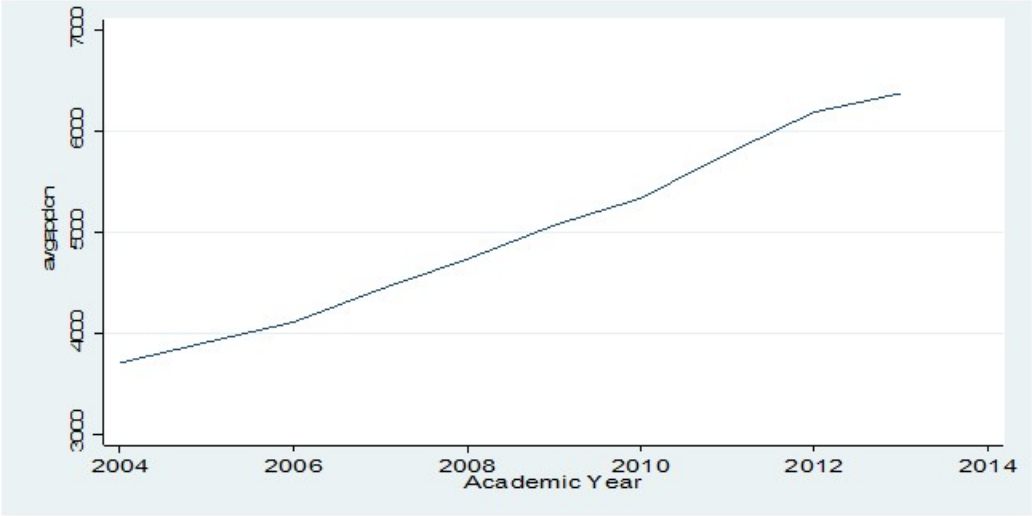

Figure 9. 10 year trend in student applications at private not-for-profit institutions in the US.

Table 11

10 Year Summary of the Total Number of Admissions at Private Not-for-Profit Institutions in the US

Academic Year	Mean	Std. Dev.	Freq.
2004	1954.781	1881.1914	420
2005	2026.1214	1907.3399	419
2006	2109.7068	2041.9124	420
2007	2184.9454	2150.6441	421
2008	2248.3555	2162.3817	422
2009	2370.7815	2318.613	421
2010	2586.2784	2665.0157	423
2011	2727.4848	2877.5564	421
2012	2818.2143	2892.4279	420
2013	2910.9145	3039.2057	421
5 year change (2004-2008) = 13%			
10 year change (2004-2013) = 33%			

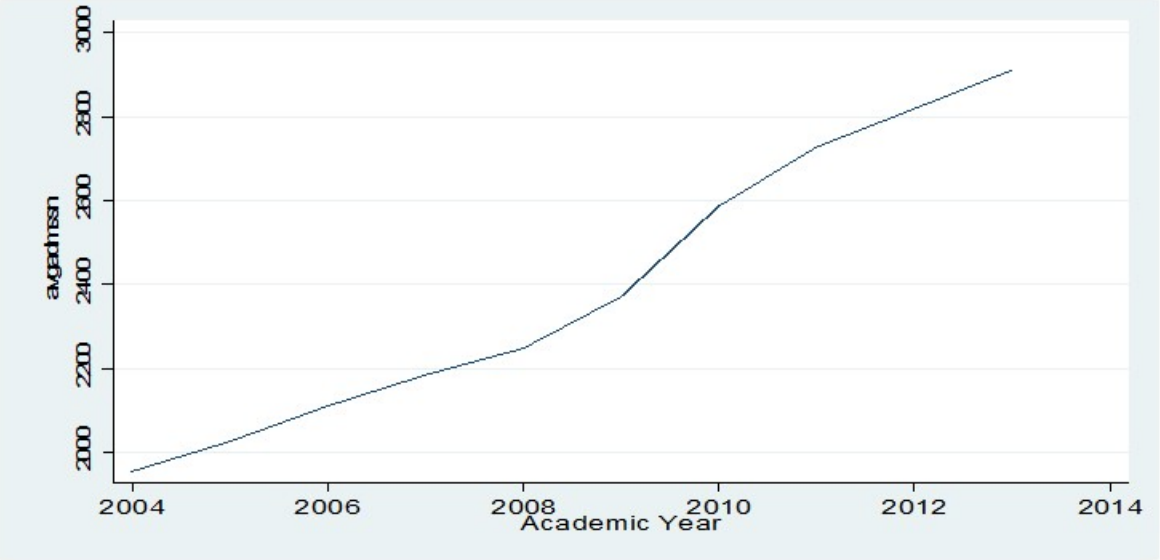

Figure 10. 10 year summary of the total number of admissions at private not-for-profit institutions in the US.

Table 12

10 Year Trend in the Percentage of Students Admitted

Academic Year	Mean	Std. Dev.	Freq.
2004	65.261976	20.284847	420
2005	63.851086	20.029769	419
2006	63.640684	20.263172	420
2007	61.433907	20.135839	421
2008	59.751921	20.264213	422
2009	59.205005	19.972939	421
2010	60.492213	19.842679	423
2011	58.880921	20.059414	421
2012	58.017951	19.784723	420
2013	57.605759	20.214033	420
5-year change (2004-2008) = -9.3%			
10-year change (2004-2013) = -13.4%			

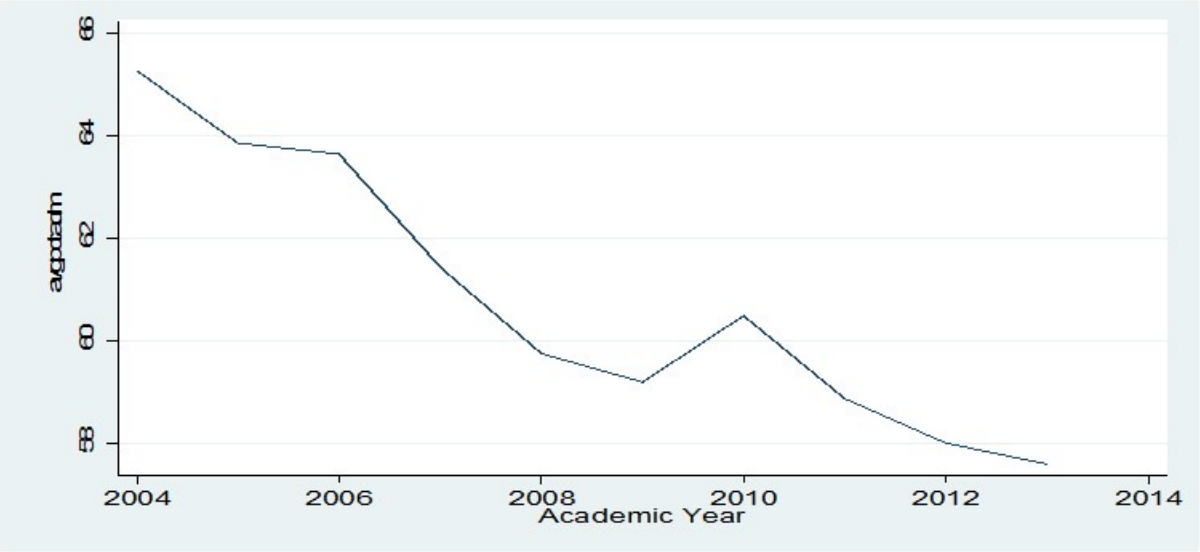

Figure 11. 10 year trend in the percentage of students admitted.

Student Socio-Economic Characteristics

Student borrowing can significantly differ because of several student characteristics. For example, student demographics, need, the ability to obtain aid from the institution and states,

enrollment status, or the extent to which parents borrow (Parent PLUS loans) (Project on Student Debt, 2013). Indeed, individual and programmatic features have been found to be predictive of graduate student borrowing (Belasco et al., 2014). Institutions that recruit well-to-do students might have lower debt levels than do those that admit less affluent students (Monks, 2014). Indicators of student socio-economic characteristics were therefore analyzed. The percentage of students receiving federal and local/state grants though not a direct indicator of socio economic status reflects it since these grants are need based. Table 14 and Figure 13 indicate that the percentage of students receiving federal grants reduced by 7.23% between 2004 and 2008, while the change between 2004 and 2013 was by 15.3%. Table 15 and Figure 14 indicate that the percentage of students receiving local/state grants reduced by 5% between 2004 and 2008, and by 18% between 2004 and 2013.

Table 13

10 Year Trend in the Percentage of Students Receiving Federal Grants

Academic Year	Mean	Std. Dev.	Freq.
2004	25.24356	14.756448	427
2005	24.260563	14.002527	426
2006	22.871795	14.489115	429
2007	22.899767	14.638214	429
2008	23.492991	13.600091	428
2009	23.957393	13.916502	399
2010	29.294393	15.617569	428
2011	32.247664	16.477914	428
2012	30.429907	15.350007	428
2013	29.792056	15.021958	428
5-year change (2004-2008) = -7.23%			
10-year change (2004-2013) = 15.3%			

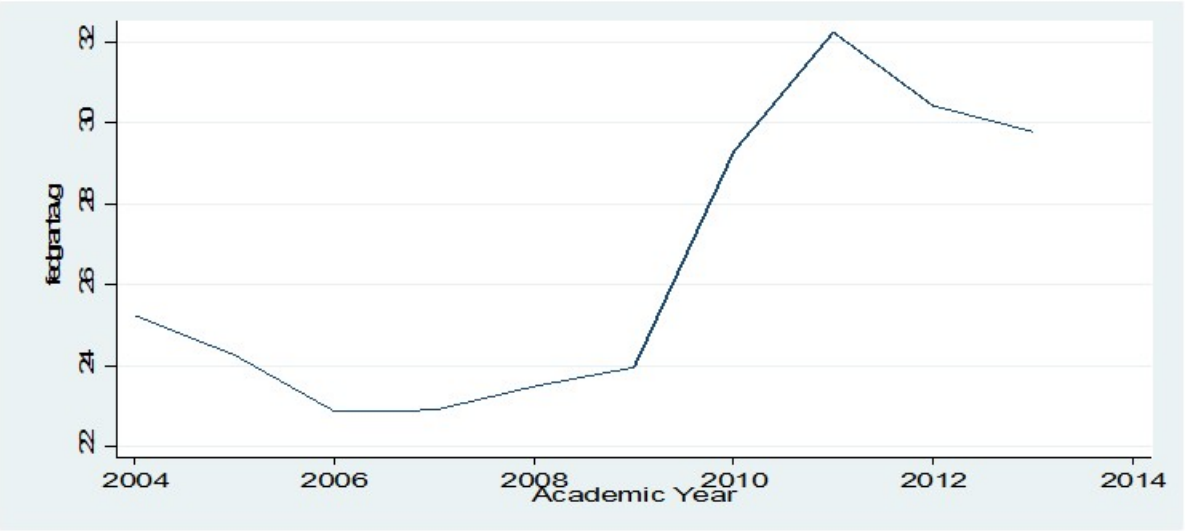

Figure 12. 10 year trend in the percentage of students receiving federal grants.

Table 14

10 Year Trend in the Percentage of Students Receiving Local/ State Grants

Academic Year	Mean	Std. Dev.	Freq.
2004	32.360465	22.322134	430
2005	32.543124	22.393593	429
2006	31.880184	22.027055	434
2007	31.04157	22.166732	433
2008	30.82448	21.860281	433
2009	29.898515	21.691661	404
2010	28.496536	20.128191	433
2011	28.700696	20.015598	431
2012	28.264501	20.843484	431
2013	27.415313	19.934116	431
5-year change (2004-2008) = -5%			
10-year change (2004-2013) = -18%			

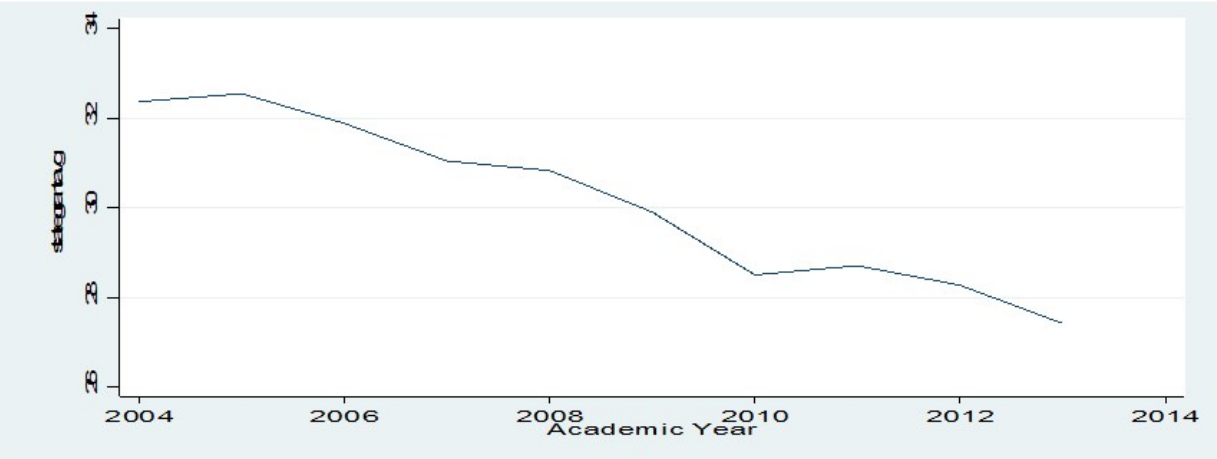

Figure 13. 10 year trend in the percentage of students receiving local/ state grants.

The reduction in federal and state grants reflects how government and states are changing their aiding of higher education to emphasize loans more than other forms of aid (Hearn, 1998). This means that students must bear a greater percentage of the cost of their education. Unfortunately, it also means that the burden of rising tuition and the attendant student borrowing might be falling on students who might be most unable to handle it (Taylor & Morphew, 2014).

Summary

Overall, the findings show that the financial and enrollment characteristics of private not-for-profit institutions in the US changed during the study period as can be seen in tables 16, 17, 18 and 19. The most change that occurred in the 10 years of this study is the increase in student borrowing, tuition, tuition reliance, applications; and a reduction in total revenue and grants. These trends show that the value and demand for higher education has continued to rise while the resources available to support its provision have fluctuated. Unfortunately, this may have increased student borrowing at private colleges.

Table 15

Mean Financial Characteristics of Private Not-for-Profit Institutions in the US

Year	Student loans	Tuition	Endowment *(in 000s)*	Other revenue sources	Total revenue	Tuition reliance	Tuition discount
2004	5668.0279	15179.98	128151.11	8691.5081	61838.336	67.937115	31.48136
2005	5811.4891	15652.044	134716.86	10023.492	65042.822	68.920654	31.657827
2006	5838.2518	16276.136	146593.98	9918.4015	69132.377	68.470629	31.933483
2007	6040.693	16403.063	169099.85	10835.503	81479.307	68.056875	32.549166
2008	6799.7207	16658.868	159290.01	9958.4861	48178.806	69.13961	32.891809
2009	7908.2464	17103.024	123135.9	7792.48	17280.159	72.985574	33.778681
2010		17043.136	128796.98	7337.8275	61647.355	73.519899	34.886977
2011	7400.5106	17058.106	146851.07	8020.5926	74758.193	72.719084	36.003215
2012	7456.7646	17328.451	139822.84	8751.6935	49371.222	73.243906	36.864679
2013	7686.8224	17557.698	151286.17	8552.2655	67776.537	72.996815	37.944399

Table 16

Mean Enrollment Characteristics of Private Not-for-Profit Institutions in the US

Year	Full-time equivalency FTE)	Percentage admitted	Federal Grant (%)	State Grant (%)
2004	3610.8129	65.261976	25.24356	32.360465
2005	3677.3806	63.851086	24.260563	32.543124
2006	3726.9275	63.640684	22.871795	31.880184
2007	3762.5464	61.433907	22.899767	31.04157
2008	3819.8097	59.751921	23.492991	30.82448
2009	3859.3723	59.205005	23.957393	29.898515
2010	3945.385	60.492213	29.294393	28.496536
2011	4034.2151	58.880921	32.247664	28.700696
2012	4049.1247	58.017951	30.429907	28.264501
2013	4060.5588	57.605759	29.792056	27.415313

Table 17

Mean Descriptive Statistics for Selected Years, 2004-2013

Variable Group	Variables	2004	2008	2013
Dependent variable	Average loan amount	5668	6799.7	7686.8
Financial characteristics	Net student tuition	15179.9	16658.8	17557.8
Financial characteristics	Endowments (in millions)	.01281511	.015929	.01512862
Financial characteristics	Tuition discount	31.48136	32.89181	37.94439
Financial characteristics	Other revenue sources	8691.5081	9958.4861	8552.2655
Financial characteristics	Total revenue	61838.336	48178.806	67776.537
Financial characteristics	Tuition reliance	67.937115	69.13961	72.996815
Enrolment characteristics	Full-time equivalency	3610.8129	3819.8097	4060.5588
Enrolment characteristics	Percentage admitted	65.3%	59.7%	57.6%
Student characteristics	Federal grant percentage	25.2%	23.5%	29.7%
Student characteristics	State grant percentage	32.4%	30.8%	27.4%

Table 18

Percentage Changes in the Means of the Financial and Enrollment Characteristics of Private Not-for-Profit Institutions in the US

Variable	2004-2008	2004-2013
Student loans	16.6	26.3
Tuition	8.88	14
Endowment	19.5	15.3
Tuition reliance	1.71	6.98
Tuition discount	3.96	16.8
Other revenue sources	13	-2
Total revenue	-28.4%	8.76%
Federal grants	-7.23	15.3
Local/state grants	-5	-18
Full-time equivalency	5.5	11.1
Percentage admitted	-9.3%	-13.4%

Research Question 2: What is the Relationship between the Financial and Enrollment Characteristics of Private Not-for-Profit Institutions and Student Borrowing?

A fixed effects regression analysis of panel data was used to answer Question 2.

Table 19

FE Regression Results, Relationship between the Financial and Enrollment Characteristics of Private Institutions and Student Loans, 2004-2013

Variable Group	Variables	Loan Average
Financial Characteristics	Net student tuition	0.255***
		(.0314)
	Tuition discount	94.10***
		(12.157)
	Revenue from endowment earnings	.00037
		(.0006)
	Revenue from private gifts, grants, and contracts	.01337
		(.0072)
	Total Revenue	-.0035***
		(.0010)
	Share of operating revenues from net tuition	21.99***
		(5.844)
Student Characteristics	Percentage of students receiving Federal grants	13.98***
		(5.728)
	Percentage of students receiving State grants	-5.785
		(4.249)
Enrollment Characteristics	Full Time Equivalent student enrollment	.4966***
		(.1801)
	Squared FTE count	-.000014***
		(4.79e-06)
	Percentage of applicants admitted	-4.678
		(4.156)
	Constant	-3663.23***
		(911)
Observations		3,713
Number of unitid		425
R-squared		0.1724

Note. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

The FE regression results are interpreted for the same institution over time while controlling for other variables in the model. The results in Table 19 above reveal that tuition,

tuition discount, tuition reliance, total revenue, FTE count, and the percentage of students receiving federal grants significantly predict changes in student borrowing.

Financial Characteristics

The institutional financial characteristics specifically provide several significant predictors of loan average. Results indicate a relationship between tuition and student loans. For every $1 increase in tuition over time, there is a corresponding increase in loan average of $.26 in constant dollars ($p<0.01$) net of other variables in the model. Tuition increases seemingly put students under pressure to borrow. Students can access federal financial aid through loans which schools can equally access when students pay tuition. Financial aid especially loans has therefore become a vital calculated mechanism for enrolling students and maximizing institutional revenue. Strong rivalry among colleges and universities for tuition paying students and dollars has led institutions to tactically use student financial aid to ensure financial security (McPherson & Schapiro, 1999). These findings reveal that as tuition increases the need for loans also intensifies. The results affirm the assertion that institutions charge high tuition to take advantage of the financial aid availed to students through loans (Belasco et al., 2014; Lucca et al., 2015; Razaki et al., 2014).

Similarly, a percentage point increase in tuition discount increases the average loan amount by $94.10 in constant dollars net of other factors ($p>0.01$). When linked to the descriptive statistics presented earlier, this result acquires substantive significance. Table 6 shows that tuition discounts at private not-for-profit institutions increased by 3.96% over a period of 5 years and by 16.8% in ten years. This coupled with the standard deviations suggest that institutions are likely to reduce tuition prices for some students by several thousand dollars

each year. However, while institutions offer students discounts to attract them, they equally depend on tuition dollars to maintain operations. Moreover, discounts are strategically managed by institutions to maximize revenue. Institutions tactically use tuition discounts to present a reasonable net price to as many students as possible but at the same time capture the tuition revenue needed to ensure excellence (Davis, 2013; McPherson, & Schapiro, 1999). This means that despite tuition discounts some students may have to pay high tuition and even borrow if necessary. Tuition discounts may also entice some students to enroll when those students might have attended a lower-price institution, with the result that they must borrow to pay a high private price. Tuition discounts may therefore increase loan amounts. For example, an institution whose tuition discount increased by 16.8% over a period of ten years might expect the average loan amount to increase by at least $1581 in constant dollars.

Similarly, a percentage point increase in tuition reliance causes an increase of $22 in loan average in constant dollars ($p<0.01$) net of other factors. Being tuition dependent puts private not-for-profit institutions under a great deal of pressure to generate revenue from students through tuition. With tuition being the major source of income for institutions, students have to borrow heavily to finance their educational costs (Doyle, 2012; Hearn, 1998; Project on Student Debt, 2011). In the same way, the loan average seems to decrease as institutions diversify their revenue sources. Each $1000 per FTE increase in total revenue sources in constant dollars causes the loan average to decrease by $.0035 ($p<0.01$) while controlling for other variables in the model. While this result is statistically significant, it is probably too small to have practical significance.

Enrollment Characteristics

The student characteristics in this model significantly predict student borrowing. As

expected, enrollment size is associated with increasing loan average, but nets diminishing returns to scale. For every additional student enrolled, the loan average amount increases by $.4966 ($p<0.01$) in constant dollars net of other factors. A point increase in squared FTE causes the loan average to reduce by .0000135 points net of other variables. Including squared FTE greatly improves the model, and it shows that FTE has diminishing and increasing returns to scale with respect to borrowing.

The loan average also increases with more students receiving federal grants. Net of other factors, a percentage point increase in the number of students who receive federal grants increases the loan average by $14 per FTE($p<0.05$). This result is not surprising especially when linked to the descriptive statistics in table 14. Table 14 indicates that the percentage of students receiving federal grants reduced by 7.23% between 2004 and 2008. While it picked up between 2004 and 2013 it remains low at 15.3%. Only 15% of students receive federal grants which means that change in this percentage is not large enough to significantly reduce the average loan amount at the institutional level. This finding may also be too small to demonstrate practical significance. The possible relationship between federal grants and student socio-economic characteristics is suggested but not demonstrated by this analysis. It would therefore merit further attention from researchers.

Research Question 3: Are the Relationships between the Financial and Enrollment Characteristics of Private Not-for-Profit Institutions and Student Borrowing Stable or Do They Change over Time?

This question was aimed at establishing whether the relationships between the independent variables and the dependent variable vary with time. To answer this question, a time trend variable was created to control for the influence of aggregate trends that are not related to

the associational relationships. The time trend variable would also reveal whether or not different years show any effect on student borrowing. That is, the interaction term lets the slope of each independent variable change with time. The regression output in table 20 shows that the model with the time trend variable is relevant in explaining average loan amounts ($p<0.01$).

After the regression, an F test was used to test the joint significance of the coefficients of the regression. This was to examine whether the independent variables together with the time trend variables were jointly significant in explaining loan average. Based on a confidence level of 95%, I fail to reject the null hypothesis that the estimated coefficients are jointly equal to zero. The results indicate that the interaction term with time is significant for all indicator variables, the estimated coefficients are jointly significant. For instance, tuition and time ($F(3, 424) = 2.7$, $P<0.05$), tuition discount and time ($F(3, 424) = 4.7$, $P<0.05$), endowment and time ($F(3, 424) = 3$, $P<0.05$), other revenue sources and time ($F(3, 424) = 3.6$, $P<0.05$), tuition reliance and time ($F(3, 424) = 5.6$, $P<0.01$), total revenue and time ($F(3, 424) = 6.3$, $P<0.05$), federal grant percentage and time ($F(3, 424) = 4.11$, $P<0.05$), state grant percentage and time ($F(3, 424) = 3$, $P<0.05$), FTE and time ($F(3, 424) = 3.7$, $P<0.05$), squared FTE and time ($F(3, 424) = 2.8$, $P<0.05$), and percentage admitted with time ($F(3, 424) = 4.87$, $P<0.05$).

Table 20

FE Regression Results, Relationship between the Financial and Enrollment Characteristics of Private Institutions, Time, and Student Loans, 2004-2013

Variables	Average Loan
Net student tuition	.00602
	(.0388)
Net student tuition _time	-.0062492**
	(.00312)
Tuition discount	-31.43967
	(17.08)

(table continues)

Variables	Average Loan
Tuition discount _time	-3.151243** (1.417)
Revenue from endowment earnings	-.0006 (.0008)
Revenue from endowment earnings _time	-.00005 (.00007)
Revenue from private gifts, grants, and contracts	-.00183 (.0141)
Revenue from private gifts, grants, and contracts _time	.0002044 (.00313)
Total revenue	-.003085** (.00107)
Total revenue time	.0000836 (.00014)
Share of operating revenues from net tuition	-.9319302 (6.919)
Share of operating revenues from net tuition _time	.5582833 (1.132)
Percentage of students receiving Federal grants	-.0499568 (7.054)
Percentage receiving Federal grants _time	-2.43465 (1.306)
Percentage of students receiving State grants	-2.735848 (4.922)
Percentage receiving State grants _time	.636439 (.7046)
Full Time Equivalent student enrollment	-.2439326 (.2743)
Full Time Equivalent student enrollment_time	-.0107126 (.00831)
Squared FTE	1.14e-06 (9.90e-06)
Squared FTE_time	2.51e-07 (4.35e-07)
Percentage of applicants Admitted	4.21028 (5.423)

(table continues)

Variables	Average Loan
Percentage of applicants Admitted _time	.339577 (.7871)
Time	552.283** (195.534)
Constant	7399.453*** (1614.05)
Observations	3,713
R-squared	0.272
Number of unitid	425

Note. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table 21

Changes in Loan Average (in 000s) for Every Unit Change in the Financial and Enrollment Characteristics of Private Institutions, 2004-2013

Independent Variables	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tuition	.00602	.012	.018	.024	.030	.036	0.042	0.048	0.054	0.060
Tuition discount	-31.44	-34.6	-37.84	-41.04	-44.2	-47.4	-50.6	-53.8	-57	-60.2
Tuition reliance	.932	1.5	2.05	2.61	3.16	3.72	4.28	4.86	5.43	5.98
Federal grant percentage	.49	2.48	4.92	7.35	9.79	12.22	14.66	17.09	19.53	21.96
State grant percentage	2.74	3.37	4.00	4.64	5.28	5.92	6.55	7.19	7.83	8.46
FTE	.244	.26	0.27	0.277	0.288	0.299	0.31	0.321	0.332	0.343
Squared FTE	1.14	3.65	6.16	8.67	11.18	13.69	16.2	18.71	21.22	23.73
Percentage of students admitted	4.21	4.55	4.88	5.23	5.57	5.90	6.24	6.58	6.92	7.26

Table 21 indicates that the relationship between the financial and enrollment characteristics of private not-for-profit institutions and student borrowing varies with time. In other words, the effect of the independent variables grows stronger or weaker with time. The results suggest that the variables interacted with time play a significant role in influencing loan average. However not all of them are substantively meaningful. The variables that are practically significant include tuition discount, tuition reliance, number of students receiving federal grants,

the number of students receiving state grants, and percentage admitted. For instance, a unit change in tuition discount at time zero causes the loan average amount to reduce by $31.44 in constant dollars net of other variables in the model. For each additional year, the effect of a unit change in tuition discount on loan average increases by $3.2 constant dollars net of other factors. So, the effect of tuition discount on loan average intensifies over a period of 10 years. It grows from $31.44 in 2004 to $60.24 in 2013. This means that when institutions consistently discount tuition charges, students are required to borrow less. It further implies that for tuition discount to have substantive influence over student borrowing, it has to be long term. Similarly, the effect of tuition reliance on loan average grows over time to six times what it was at time zero. A percentage increase in the number of students receiving federal grants reduces the loan amount by -.49 points at time zero and that amount increases by 2.43 with each additional year. Hence by 2013, the effect of the percentage of students who received federal grants on loan amount is 44 times more than it was in 2004. A percentage change in the number of students receiving state grants leads to a 2.7-point reduction in loan average and that amount increases by .64 with each additional year. Similarly, the effect of the percentage admitted on loan average changes with time (see Table 21).

The effects of tuition, total revenue, and FTE also vary with time. However, although these coefficients are statistically significant, they are so small that they probably do not matter substantively. For instance, the effect of tuition on loan average increases by only $0.006 for each additional year, total revenue increases by only $0.03 for each additional year and FTE changes by about 0.02 points for each additional year. All these are too small to have substantial effect on loan average and are hence quite negligible.

Generally, the effect of the indicator variables on loan average changes with time. Several explanations can be explored to elucidate this trend. A significant trend is the change in tuition discounts from $-31.44 in 2004 to $-60.24 in 2013. This is in contrast with the findings in question two that indicated that a percentage point increase in tuition discount increased the average loan amount by $94.10 in constant dollars net of other factors ($p>0.01$). Therefore, when tuition is discounted for a short time it may increase loan amount but when the discounts are long term they reduce the loan amount. Tuition discounts are aimed at attracting and retaining students who might be reluctant or incapable of paying the posted tuition to attend a particular college or university. Tuition discounts are also intended to enroll students and collect enough net tuition revenue to counterbalance education and related expenses (Davis, 2013). The difference in the effect of tuition discounts with the time interaction term indicates that for tuition discounts to effectively reduce student borrowing, they have to be long term. If institutions succeed in attracting students to enroll for the first year but don't offer them tuition discounts in the consecutive years, then the discount may not have a noticeable effect on loan average. Similarly, if students enroll but discover that they cannot afford to stay in school due to the high tuition then they may borrow to stay enrolled or drop out. When students drop out institutions lose tuition revenue and may raise charges for the remaining students. Overall, the changes in tuition discount indicate that for it to have a significant effect on loan average, it must be offered for all the years a student is enrolled in a college or university. However, this may not be sustainable given the dual role tuition discounts play in institutions. The average tuition discount rate has always been an indicator of an institution's ability to remain viable in the marketplace. If institutions offer tuition discounts but are not able to enroll enough students to ensure their viability, then they may resort to revenue maximization schemes including raising

tuition. This trend suggests that institutions need to rethink the commercial model on which higher education has depended for a long time (Davis, 2013). Institutions resort to tuition discounting, tactical tuition maximization and selective price discrimination (McPherson & Schapiro, 1999). Yet if borrowing is done, perhaps so are revenues implying that institutions could discount towards disaster.

The regression results in question two showed that a percentage increase in tuition reliance causes an increase of $22 in loan average in constant dollars ($p<0.01$) net of other factors. However, when tuition reliance is interacted with time, a percentage increase in tuition reliance reduced the loan amount by $0.932 net of other factors and this amount increases to $6 over a period of 10 years. Similarly, the effect of the percentage admitted on loan average changes with time from 4.21 in 2004 to 7.26 in 2013. This result differs from the finding in question two where the percentage of students admitted had no significant effect on loan amount. While these figures might be incremental, the coefficients are very small that they don't matter substantively.

The findings in question two further reveal that the loan average increases with more students receiving federal grants. Net of other factors, a percentage increase in the number of students who receive federal grants increases the loan average by $14 per FTE ($p<0.05$). However, when the percentage of students receiving federal grants is interacted with time it produces a different result. With the interaction term, a percentage increase in the number of students receiving federal grants reduces the loan amount by $.49 and this amount increases to $22 after ten years. These results make more sense when analyzed alongside the descriptive statistics. Table 14 and Figure 13 indicate that the percentage of students receiving federal grants reduced by 7.23% between 2004 and 2008, while it increased between 2004 and 2013 was by

15.3%. Therefore, the number of students receiving federal grants increases over time which probably reduces loan requirement and loan amount.

Overall, the significance of the interaction term with time is not surprising given the social, political, and financial changes that characterize the higher education environment. The findings indicate that with each passing year, it gets more difficult for institutions to strike the right balance among cost, demand, and subsidies in order to provide a quality higher education and achieve their goals of generating revenue. Private, not-for-profit institutions operate in a challenging and unstable environment. It would therefore make sense to consider change over time so that long term trends can be recognized and exploited.

CHAPTER 5

CONCLUSION

Trends in higher education funding and financial aid policy have increased the number of students who borrow and the amount of debt they incur for higher education. The increased use of student loans might be socially desirable and politically appealing in as far as they are low cost and easy to administer (Dynarski & Scott-Clayton, 2013; Hearn & Holdsworth, 2004; Hillman, 2014). On the other hand, even though loans enable students to afford a college education, in the aftermath they produce a class of indebted graduates who must work to free themselves from the bondage of educational debts or be metaphorically imprisoned by debt (ASA, 2013). Increased borrowing by students has therefore caused public apprehension about possible future repercussions. The concern is that overreliance on loans as a form of financial aid may reduce institutional choices, access, and accomplishment for debt averse students (Craig & Raisanen, 2014). There are additional worries such as whether and how the next generation can afford necessities, for example a home or car, if their disposable income is committed to paying off student loans.

Student borrowing has drawn a lot of scholarly interest in the recent past. The effect of borrowing and the likelihood of indebtedness on students' choices has been analyzed over the years. The focus has mainly been on individuals rather than institutions. The extent to which changing aspects at the institutional level accelerate or slow down student borrowing is undefined (Belasco et al., 2014; Hillman,2015). That raises more questions and interest for a deeper understanding of what drives student debt at different institutions. How diverse factors within school environments (e.g. the need to ensure a stable flow of resources) may influence student borrowing has not been analyzed. For instance, institutional financial and enrollment

characteristics influence the growth or reduction of student debt. These characteristics change with time and they are parallel to changes in the wider higher education environment.

The purpose of this study was to analyze changes in student borrowing at private not-for-profit four-year institutions during the past decade in an endeavor to identify trends and possible consequences. This was especially important because higher education institutions in the US vary depending on control, revenue sources, cost of attendance, admission selectivity and the resources available to students. Financial austerity, tuition dependence, and the financial and enrollment characteristics of private not-for-profit four year institutions were analyzed from 2004 to 2013.

This study drew on resource dependence theory (RDT) (Pfeffer & Salancik 1978; Pfeffer, 2005). RDT highlights the interaction between an organization and its environment. It suggests that organizations depend on resources for survival, therefore depriving them of critical resources causes uncertainty. To survive, organizations must ensure a continuous flow of resources, take full advantage of existing resources, and maintain key sources of revenue (Carroll & Stater, 2009; Jaeger & Thornton, 2005; Rhoades & Slaughter, 2004). Another tenet of RDT is that uncertainty or instability concerning a critical resource threatens the existence of the institution because it makes stakeholders doubtful about the viability of the institution (Pfeffer & Salancik, 1978).

In the higher education environment in which competition for scarce resources is typical, RDT links student borrowing to financial challenges and tuition dependence at institutions. The reliance on tuition dollars to fund education can explain increases in student loans. Indeed, tuition increases have been supposed to escalate the demand for loans (Lucca et al., 2015). RDT further suggests that institutions face competing demands from numerous stakeholders, and that

it is essential to decide strategically between options by linking them to critical funds (Fowles, 2014). For private not-for-profit institutions, RDT proposes that changes in revenue sources will forecast changes in operations. The main principle of RDT is that revenue is essential and that institutions are challenged and weakened when funds reduce and must be sought from different and varied sources (Jaeger & Thornton, 2005). If funding from donations, endowments, and other sources deteriorate making tuition the main source of revenue, and if students are prepared to pay high tuition to attend institutions of their choice, then institutions try all means to maximize tuition dollars (McPherson & Schapiro, 1999). This is likely to increase student borrowing because institutions charge high tuition, but students are willing to pay the posted charges to access what they perceive as quality education. Higher education consumers are so status conscious that high tuition may not prevent but attract them to enroll because it reflects the high standing of the institution (Labaree, 1997). Generally, RDT illuminates how intense competition for resources and radical stratification among institutions may upsurge tuition charges and loan amounts. Unfortunately, this only benefits a few elite providers and customers, while the less affluent might be isolated, priced out of higher education (Labaree, 1997) or be forced to borrow excessively to attend any institution.

This study only considered private not-for-profit four-year higher education institutions in the US based on the Carnegie Classification of 2005. Data for the study came from the Delta Cost Project database and the National Association of College and University Business Officers (NACUBO). These data are publicly available, and they have been converted to analytical formats to allow for longitudinal analyses of trends in postsecondary education with a focus on revenues and expenditures. For the first research question, descriptive statistics were provided to show changes in the financial and enrollment characteristics of private not-for-profit institutions

over a period of ten years from 2004-2013. Research question two was answered using a fixed effects regression analysis with average loan amount as the dependent variable and selected institutional financial and enrollment characteristics as independent variables. For research question three, a time trend variable was created to control for the influence of aggregate trends that are not related to the associational relationships. An F test was then run to examine whether the explanatory variables were jointly significant in explaining loan average.

Results

The financial and enrollment characteristics of private not-for-profit institutions during the study period were characterized by incremental variation. While the amount of tuition charges and resultant student borrowing has increased, the other sources of revenue have either remained constant or declined. Several factors can be explored to elucidate the fluctuations that have occurred within this period for some of these variables. Generally, tuition has been the major source of revenue at private institutions. In a bid to maximize tuition dollars, institutions have discounted tuition prices selectively. That is, they offer lower rates to students who are reluctant to pay extra, particularly the talented students whose enrollment might enrich the standing of the institution (Hillman, 2012; McPherson & Schapiro, 1999). Hence, institutions tactically use tuition discounts to capture the tuition revenue needed to ensure operations while presenting a reasonable net price to as many students as possible (Davis, 2013; McPherson, & Schapiro, 1999).

According to RDT, response to consumer demands and preferences at private institutions may cause them to charge higher tuition to acquire expensive items that offer or symbolize superiority. Indeed, high tuition may show worth (Weisbrod et al., 2008; McPherson, &

Winston, 1993) and it may make students willing to borrow to acquire that valuable education. Despite, and partly because of, the opinion that students benefit more from higher education, rising tuition raises major concerns regarding the balancing of educational cost and quality with the cumulative demand for access and participation. There is a widespread anxiety about rising tuition and how or even if students from diverse backgrounds can afford to finance their investments in higher education.

The second research question examined the relationship between the financial and enrollment characteristics of private institutions and student loans. The fixed effects regression results reveal that tuition, tuition discount, tuition reliance, total revenue, enrollment size (FTE count and the percentage of students receiving federal grants significantly predict changes in student borrowing.

Several explanations can be explored to clarify the relationship between these variables and student borrowing. For instance, being tuition dependent puts private not-for-profit institutions under a lot of pressure to generate revenue from students through tuition. Tuition dependence leads to tuition increases which in turn increases the demand for loans (Lucca et al., 2015). Tuition discounts are strategically managed by institutions to maximize revenue (Davis, 2013; McPherson, & Schapiro, 1999). Therefore, while institutions may reduce tuition prices for some students, they may equally increase prices for other students by several dollars each year. The descriptive statistics suggest that in the aggregate prices are being discounted more steeply for some students than they are being raised or maintained for others. Nevertheless, some students might still face high tuition charges and be forced to borrow even though they attend institutions known for large tuition discounts. As expected, increases in tuition reliance cause corresponding increases in loan average. As tuition becomes the major source of income for

institutions, costs increase, and students may have to borrow heavily to finance their expected contributions to educational costs (Hearn, 1998; Project on Student Debt, 2011; Doyle, 2012). Logically, enrollment size is associated with increasing loan average, but nets diminishing returns to scale. Increased demand for higher education increases the cost of education, tuition dependence, and resultant demand for loans. The loan average further increases with more students receiving federal grants. This is not surprising because price discrimination and tuition revenue maximization (McPherson & Schapiro, 1999) increase tuition charges and student borrowing despite some students receiving aid. Besides, findings suggest that the percentage of students receiving federal grants (15%) is not large enough to substantively reduce the average loan amount at the institutional level.

The final research question considered whether these relationships are stable or change in response to the changing policy environment. This question was aimed at establishing whether the relationships between the independent variables on the dependent variable vary with time. A time trend variable was created and a fixed effects regression run including the time trend variable. The regression output reveals that the model with the time trend variable was relevant in explaining average loan amounts ($p<0.01$). A test of joint significance revealed that the interaction terms were significant for all indicator variables.

The above notwithstanding, just a few variables were practically significant. For instance, a unit change in tuition discount at time zero causes the loan average amount to reduce by $31.44 constant dollars net of other variables in the model. For each additional year, the effect of a unit change in tuition discount on loan average increases by $3.2 constant dollars net of other factors. Similarly, the effect of tuition reliance on loan average grows over time to approximately six times what it was at time zero. A percentage increase in the number of students receiving federal

grants reduces the loan amount by .05 points at time zero and that amount increases by 2.43 with each additional year. Hence by 2013, the effect of the percentage of students who received federal grants on loan amount is approximately 44 times more than it was in 2004. A percentage change in the number of students receiving state grants leads to a 2.7 point reduction in loan average and that amount increases by .64 with each additional year. Generally, the effect of the indicator variables on loan average changes with time.

A few explanations can elucidate this trend. The effect of time on the influence of the independent variables on the dependent variable bears a cautionary tale. It cautions against considering temporary circumstances while ignoring long term trends. The change in tuition discounts from 31.44% in 2004 to about 60% in 2013 indicates that tuition discounts may benefit students more in the long term. Temporarily offering discount to students may succeed in getting them into institutions but it may not necessarily keep them there. On the contrary, if students were offered tuition discounts throughout their stay in college, it would probably reduce loan requirement. This makes practical sense because the economic pressures on students and families do not disappear when they enroll into higher education. Therefore, institutions that offer temporary solutions to financial need face the danger of losing enrollment, students and tuition revenue.

The effect of tuition reliance on loan average reduces over time to approximately six times what it was at time zero. That is, with each additional year, tuition reliance has a more negative effect on loan average. This could be because loan average is correlated with cost and the ability to pay. If tuition discounts no longer maximize revenue, institutions may fail to continue them because they don't benefit the institutions.

Overall, funding has continued to be a major concern in higher education (Alstete, 2014).

Costs have continued to rise due to the cost disease, technological changes and innovations, the nature of the higher education industry, and the fiscal environment in which institutions operate (Archibald & Feldman, 2011). The funding of private nonprofit institutions has been particularly challenging because of their small sizes, high cost, and heavy tuition dependence. Most private colleges and universities have long depended on tuition as a source of revenue (Hossler, 2006). Increases in financial aid enable institutions to raise tuition with the assurance that loans will shield the increase (Heller, 2013). Moreover, the nature of the higher education industry means that its production will always be costly. The increased demand for higher education without matched expansion in supply makes tuition prices rise rapidly (Heller, 2013). However, the prospects of attaining a college degree have made more students interested in enrolling. The effect of the above circumstances evolves over time. This recommends that the passing of time should be a vital component in analyzing the effect of student borrowing.

Limitations

I recognize some limitations which were considered during data analysis and interpretation. First, fixed effects models are prone to false negatives or type II errors. The evaluations may yield large standard errors leading to bigger P values and confidence intervals (Allison, 2009; Zhang, 2010). This was handled by reporting robust standard errors. Secondly, because I include indicators of student socio economic characteristics in the analysis, findings may seem to represent student borrowing for individual students. On the contrary, my analysis focuses on aggregate student borrowing at each institution rather than individual student borrowing. Moreover, my study provides a “forest-level” view of change over time. It does not

examine trends for specific institutions. As a result, interpretations should be restricted to aggregate student borrowing at the institutions in the study sample.

Furthermore, this study was based on secondary data and the analysis is restricted to only those variables included in the Delta Cost Project dataset, and NACUBO. It is therefore possible that the dependent variable does not cover all the borrowing students do, for example, money borrowed from family or friends. The study also suffers the limitations of secondary data. For instance, loan average amount was not reported for the year 2010. I had also intended to include the share of an institution's enrolment drawn from low-income households. However, the Delta Cost Project database stopped recording measures of student socio-economic characteristics such as household income and dependency status in 2008. Including those measures would result in the loss of all data from 2009 to 2013. Instead of losing half of my sample, I included the percent of students who receive federal and state financial aid. This measure is not equivalent to socio-economic status but merely reflects it, and should be analyzed cognizant of that fact.

Implications for Research

Existent research has mostly focused on the effect of student loans on student attainment by students' individual characteristic at public institutions. There is a dearth of information on student loans at private not-for-profit colleges and universities in the US, and more can be studied on this topic.

This study considered only private not-for-profit institutions in the US using data from the Delta cost project and NACUBO. Expanding the sample to include other types of institutions and using a wider data set could provide more understanding of the student borrowing problem in the US. For instance, NACUBO has more data that could be considered, such as data on

student financial services and institutional aid. Some of these data are not publicly available and hence were not readily accessible to me due to logistics.

Studies that focus on individual variables in more detail would also be enlightening. For this study, some institutions that did not report endowment data for all the ten years of study were dropped. Being able to access endowment data for a larger sample of institutions, and knowing the details of how endowment funds are managed by individual institutions, would provide exceptional understanding rather than assuming that all institutions use their endowment funds in similar ways. Findings might contradict assertions that affluent institutions with big endowments and diverse revenue sources provide subsidies to their students while less profitable institutions may not be able or may choose not to subsidies to their students, hence the students would have to borrow (Belfield, 2013).

Previous research has lamented changes in financial aid from a benevolent arrangement aimed at helping students to a tuition maximization instrument being used and maybe abused by institutions. McPherson and Schapiro (1999) confirm that strong rivalry among institutions for tuition revenue has unavoidably made student financial aid a calculated variable in keeping institutions financially sound. The dynamics in financial aid at the institutional level might also be enlightening. For instance, tuition discounting may increase demand at some institutions but weaken it for others. It might be interesting to link financial aid practices like tuition discounting to other variables such as endowment funds, FTE, admission selectivity, and student demographic characteristics.

A qualitative study targeting policy makers and institutional leaders would also be desirable to consider the rationale behind financial decisions regarding students at private not-for-profit institutions at the federal, state, and institutional level. It might be an issue of private

versus public good (Baum & McPherson, 2011; Labaree, 1997; McMahon, 2009), raising questions such as, who can access higher education, who benefits from it, and who should pay? But, although individuals benefit from higher education more than the public, society altogether profits from an educated population (Labaree, 1997; Hearn & Longanecker, 1985; McMahon, 2009). It would be useful to analyze the wide-ranging goals of private higher education and its far-reaching benefits to the public.

Implications for Policy and Practice

This study's findings highlight changes in student borrowing at private not-for-profit higher education institutions in the US. The results presented above generally agree, although not perfectly, with the theoretical framework (RDT) employed in this study. Findings raise troubling questions about the direction of higher education funding in the US, and they reveal some trends that policymakers in private higher education and higher education finance might find worth considering.

The amount of borrowing among students appears to be systematically increasing. The amount of debt students incur for higher education is also steadily growing. While student debt might be socially desirable (Hillman, 2014), and politically appealing, the growing loan orientation should be of concern to policy makers who have gradually shifted the burden of funding higher education to students. The possibilities and prospects of a college degree are overturned when students' financial futures are jeopardized by the financial strain of paying off a debt in an uncertain and shrinking economy. In addition, when many students are expected and encouraged to borrow to pay for their education, it calls into question the practicality of the existing ways higher education in the U.S. is funded.

Increasing tuition dependence at institutions appears to intensify student borrowing. That is, institutional reliance on tuition dollars is positively correlated with average loan amounts. Only substantial tuition discounts over time might reverse this trend. Despite, and partly because of the view that students benefit more from higher education, rising tuition should be of major concern to policy makers, especially those interested in balancing educational cost and quality with the cumulative demand for access and participation. Furthermore, competition for tuition paying students will increase qualitative differences between institutions which could result in preferential access to higher education, further education, and employment.

Another trend identified in this study that is worth noting is the increase in tuition discounts which corresponds with the increase in tuition and loan average. Findings indicate that institutions have increasingly resorted to "strategic maximization" or "selective price discounting" to make the most out of tuition dollars (McPherson & Schapiro, 1999). This trend should caution policy makers concerned with financial aid to rethink the original aims of financial aid. If financial aid mutates from a benevolent prospect designed to help students to a vital calculated mechanism for enrolling students and maximizing institutional income, it might have inadvertent consequences. For instance, tuition charges will continue to rise, students will increasingly be encouraged to borrow, and some of them might be priced out of higher education. Hence, institutional practices such as, strategic maximization and price discrimination need to be moderated so that financial aid realizes its objective of encouraging fairness in higher education entry.

The trends identified in this study further indicate that some students may fail to access private higher education or access it under adverse conditions. Descriptive statistics revealed that the percentage of students receiving federal and state grants has been decreasing over the years.

Based on the democratic equality goal of education (Labaree, 1997), policy makers should be concerned about proving equitable access to higher education to all student subpopulations. Yet evidence from this study cautions that, as the burden of funding higher education falls more on students, and as those students are required or encouraged to borrow to be able to cover their educational costs, some students may be disadvantaged. Unfortunately, the burden of high tuition charges and the related student loan problem might fall disproportionately on those students who are incapable of handling it (Taylor & Morphew, 2014).

Further Directions

This study examined changes in student borrowing at private not-for-profit four year institutions in the US. Private for profit institutions were not considered and there is limited literature on student borrowing at these institutions. A similar study considering private for profit institutions could therefore be conducted. Furthermore, while both public and private institutions strategically maximize enrollments, and student financial aid, they approach it differently because of their varying institutional circumstances (McPherson & Schapiro, 1999). It could therefore be expanded into a comparative study of student borrowing at private and public institutions.

The demand for higher education in the US has increased over time leading to many private institutions. This could be because of the belief in the value of a college degree. There should also be a consideration of the impact of student loans on students who attend private not-for-profit institutions. Does acquiring a college degree adequately increase their social mobility to compensate for the difficulties of acquiring credit? Should students be encouraged to borrow

for higher education despite the uncertainties in the economy? Delving into such concerns might balance socio-economic apprehensions, and the benefits of investing in higher education.

Conclusion

This study examined changes in student borrowing at private not-for-profit four-year institutions during the past decade. Analytical focus was on the financial and enrollment characteristics of private not-for-profit institutions, their relationship to student borrowing and whether these relationships vary with time. Overall, social, political, and financial circumstances influence student borrowing. Institutional control, variations in charges, cost of living, student demographics, access to auxiliary revenue, and financial aid policies are important determinants. High tuition dependence and strong rivalry among institutions for funds and students heightens tuition revenue maximization which in turn intensifies student borrowing. Specifically, financial aid has become a vital calculated mechanism for enrolling students, maximizing income, and sustaining institutional funds. Students are encouraged to borrow to fill classrooms (Razaki et al., 2014).

The changes in student borrowing over time at private not-for-profit institutions reflect changes in the wider higher education environment. Higher education worldwide has undergone a period of constant change characterized by financial challenges, policy variations, enrollment inconsistencies, demands for accountability, and ambiguity about educational aims (Johnstone, 2002; Altbach et al., 2005). Strong internal and peripheral forces driving change within higher education are altering its nature—its students, faculty, curriculum, pedagogy, technology, customer demands, finances, and its role in society (Rowley et al, 1997; Edge, 2004; Altbach et al., 2005). Public opinions on who benefits from higher education have fundamentally changed,

which has similarly changed the funding of higher education. Given that higher education is characterized by constant change, the factors that drive such change need to be constantly analyzed and harnessed. This study however, cautions against overestimating temporary circumstances. Instead long term trends must be identified and evaluated.

This study recommends that the long term impact of the distinct institutional characteristics that influence student borrowing must be extensively analyzed before loans can be maintained as a prevailing financial aid policy for higher education (Dowd & Coury, 2006). Similarly, the long term impact of enrollment practices such as strategic maximization and price discrimination need to be analyzed before such practices can be held responsible for driving student borrowing. That way institutions might strike the right balance among cost, demand, and subsidies in order to provide a quality higher education and achieve their goals of generating revenue.

REFERENCES

Ackers, E., Chingos, M. M., & Henriques, A.M. (2015). Understanding changes in the distribution of student debt over time. In B. Hershbein & K.M. Hollenbeck (Eds.), *Student loans and the dynamics of debt*. WE Upjohn Institute.

Addo, F. R., Houle, J. N., & Simon, D. (2016). Young, black, and (still) in the red: Parental wealth, race, and student loan debt. *Race and Social Problems, 8*(1), 64-76.

Allison, P. D. (2009). *Fixed effects regression models* (Vol. 160). SAGE Publications.

Alstete, J. W. (2014). Revenue generation strategies: Leveraging higher education resources for increased income. *ASHE Higher Education Report, 41*(1), 1-138.

Altbach, P. G., Berdahl, R. O., & Gumport, P. J. (2005). *American higher education in the twenty-first century* Baltimore. MD: Johns Hopkins UP.

American Federation of Teachers, AFL-CIO (AFT 2012). *On the backs of students and families. Disinvestment in higher education and the student loan debt crisis.* Available at; https://www.aft.org/pdfs/highered/studentdebt0613.pdf

American Student Assistance (ASA) (2013). *Life delayed: The impact of student debt on the daily lives of young Americans*. http://www.asa.org/pdfs/corporate/life-delayed.pdf

Archibald, R.B., & Feldman, D.H. (2011). *Why does college cost so much?* New York: Oxford University Press.

Avery, C., & Turner, S. (2012). Student loans: Do college students borrow too much-or not enough? *Journal of Economic Perspectives*, 165-192.

Barringer, S. N. (2016). The changing finances of public higher education organizations: Diversity, change, and discontinuity. In *The university under pressure* (pp. 223-263). Emerald Group Publishing Limited.

Baum, S. (2015). The evolution of student debt in the United States. In B. Hershbein & K.M. Hollenbeck (Eds.), *Student loans and the dynamics of debt*. WE Upjohn Institute.

Belasco, A. S. & Trivette, M. J. & Webber, K. L. (2014). Advanced degrees of debt: Analyzing the patterns and determinants of graduate student borrowing. *Review of Higher Education, 37*(4), 469-497.

Belfield, C. R. (2013). Student loans and repayment rates: The role of for-profit colleges. *Research in Higher Education, 54*(1), 1-29

Berman, E. P., & Stivers, A. (2016). Student loans as a pressure on US higher education. In *The university under pressure* (pp. 129-160). Emerald Group Publishing Limited.

Breneman, D. W. (1996). Affordability and the private institution. *Educational Record*, *66*(4), 14-17.

Cameron, K. (1983). Strategic responses to conditions of decline: Higher education and the private sector. *The Journal of Higher Education*, 359-380.

Carroll, D. A., & Stater, K. J. (2009). Revenue diversification in nonprofit organizations: Does it lead to financial stability? *Journal of Public Administration Research and Theory, 19*(4), 947-966.

College Board, The. (2014). *Trends in student aid 2014*. http://trends.collegeboard.org/sites/default/files/2014-trends-student-aid-final-web.pdf

Craig, J. D., & Raisanen, S. R. (2014). Institutional determinants of American undergraduate student debt. *Journal of Higher Education Policy and Management*, *36*(6), 661-673.

Delaney, J. A. (2014). The role of state policy in promoting college affordability. *The ANNALS of the American Academy of Political and Social Science, 655*(1), 56-78.

Denhart, C. (2013). How the $1.2 trillion college debt crisis is crippling students, parents and the economy. *Forbes,* August 7.

Denison, D., Fowles, J., & Moody, M. J. (2014). Borrowing for college: A comparison of long-term debt financing between public and private, nonprofit institutions of higher education. *Public Budgeting & Finance*, *34*(2), 84-104.

Desrochers, D.M; Hurlburt, S.& Sun, J. (2015). *Delta Cost Project at American Institutes for Research.* www.deltacostproject.org

Dowd, A. C., & Coury, T. (2006). The effect of loans on the persistence and attainment of community college students. *Research in Higher Education, 47*(1), 33-62.

Dowd A., (2004). Income and financial aid effects on persistence and degree attainment in public colleges. *Education Policy Analysis Archives, 12*(21).

Dowd, A. C. (2008). Dynamic interactions and intersubjectivity: Challenges to causal modeling in studies of college student debt. *Review of Educational Research, 78*(2), 232-259.

Doyle, W. R., & Delaney, J.A. (2009). Higher education funding: The new normal. *Change, 41*(4), 60-62.

Doyle, W. R. (2010). Changes in institutional aid, 1992–2003: The evolving role of merit aid. *Research in Higher Education, 51*(8), 789-810.

Doyle, W. R. (2012). The politics of public college tuition and state financial aid. *Journal of Higher Education, 83*(5), 617-647.

Dynarski, S., & Scott-Clayton, J. (2013). *Financial aid policy: Lessons from research* (No. w18710). National Bureau of Economic Research.

Dwyer, R. E. & McCloud, L. & Hodson, R. (2012). Debt and graduation from American universities. *Social Forces 90(4),* 1133-1155.

Ehrenberg, R. G. (2000). *Tuition rising*. Harvard University Press.

Ehrenberg, R.G. (2006). The perfect storm and the privatization of public higher education. *Change, 38*(1), 46-53.

Ehrenberg, R. G. (2012). American higher education in transition. *The Journal of Economic Perspectives, 26*(1), 193-216. doi: http://dx.doi.org/10.1257/jep.26.1.193

Fathi, M., & Wilson, L. (2009). Strategic planning in colleges and universities. *Business Renaissance Quarterly, 4*(1), 91-103.

Fossey, R., & Bateman, M. (1998). *Condemning students to debt: College loans and public policy*. New York, N.Y.: Teachers College Press.

Fowles, J. (2014). Funding and focus: Resource dependence in public higher education. *Research in Higher Education, 55*(3), 272-287.

Gordon, N. (2004). Do federal grants boost school spending? Evidence from Title I. *Journal of Public Economics, 88*(9), 1771-1792.

Gross, J. P., Cekic, O., Hossler, D., & Hillman, N. (2009). What matters in student loan default: A review of the research literature. *Journal of Student Financial Aid, 39*(1), 19-29.

Hearn, J.C. (1998). The growing loan orientation in federal financial aid policy: A historical perspective. In R. Fossey and M. Beteman (Eds.), *Condemning students to debt* (pp. 47-75). New York: Columbia University.

Hearn, J. C., & Holdsworth, J. M. (2004). Federal student aid. Public funding of higher education: *Changing contexts and new rationales* (p. 40).

Hearn, J. C. & Longanecker, D. (1985). Enrollment effects of alternative postsecondary pricing policies. *The Journal of Higher Education, 56*(5), 485-508.

Hearn, J. C. & Rosinger, K. O. (2014). Socioeconomic diversity in selective private colleges: An organizational analysis. *The Review of Higher Education, 38*(1), 71-104.

Heller, D.E. (2006). The changing nature of public support for higher education in the United States. In P.N. Teixeira, D.B. Johnstone, M.J. Rosa, & H. Vossensteyn (Eds.), *Cost sharing and accessibility in higher education: A fairer deal?* (pp.133-158). Dordrecht, Netherlands: Springer.

Heller, D. E. (2008). The impact of student loans on college access. *The effectiveness of student aid policies: What the research tells us* (pp. 39-68).

Heller, D. E. (2013). Does federal financial aid drive up college prices. *American Council on Education*.

Hershbein, B., & Hollenbeck, K. M. (Eds.). (2015). *Student loans and the dynamics of debt*. WE Upjohn Institute.

Hillman, N. W. (2012). Tuition discounting for revenue management. *Research in Higher Education, 53*(3), 263-281.

Hillman, N. W. (2014). College on credit: A multilevel analysis of student loan default. *The Review of Higher Education 37*(2), 169-195.

Hillman, N. W. (2015). Borrowing and repaying federal student loans. *Journal of Student Financial Aid, 45*(3).

Jaeger, A. J., & Thornton, C. H. (2005). Moving toward the market and away from public service? Effects of resource dependency and academic capitalism. *Journal of Higher Education Outreach and Engagement*, *10*(3), 53-67.

Jaquette, O., & Curs, B. R. (2015). Creating the out-of-state university: Do public universities increase nonresident freshman enrollment in response to declining state appropriations. *Research in Higher Education*, 1-31.

Jaquette, O., & Hillman, N. W. (2015). Paying for default: Change over time in the share of federal financial aid sent to institutions with high student loan default rates. *Journal of Student Financial Aid, 45*(1), 2.

Jaquette, O., & Parra, E. E. (2014). Using IPEDS for panel analyses: Core concepts, data challenges, and empirical applications. In *Higher education: Handbook of theory and research* (pp. 467-533). Springer Netherlands.

Jensen, E. L. (1981). Student financial aid and persistence in college. *Journal of Higher Education, 52*(3), 280-93.

Johnstone, D. B. (2001). Higher education and those 'out of control costs.' In *Defense of American higher education* (pp. 144-180).

Johnston, D. B. (2002). *Response to austerity: The imperatives and limitations of revenue diversification in higher education*. Faculty of Education, Hong Kong Institute of Educational Research, the Chinese University of Hong Kong.

Johnstone, D. B. (2005, May). Higher educational accessibility and financial viability: The role of student loans. In *World report on higher education: The financing of universities II* (pp. 24-25). International Barcelona Conference on Higher Education, Global University Network for Innovation (GUNI) Barcelona, Spain, May.

Kim, D. (2007). The effect of loans on students' degree attainment: Differences by student and institutional characteristics. *Harvard Educational Review*, *77*(1), 64-100.

Labaree, D.F. (1997). Public goods, private goods: The American struggle over educational goals. *American Educational Research Journal*, *34*(1), 39-81.

Lucca, D. O., Nadauld, T., & Shen, K. (2015). *Credit supply and the rise in college tuition: evidence from the expansion in federal student aid programs*. Federal Reserve Bank of New York Research Paper.

Macy, A., & Terry, N. (2007). The determinants of student college debt. *Southwest Econ Rev, 34*(1), 15-25.

Martin, J. P. (2012). *Tuition discounting through unfunded institutional aid at private baccalaureate colleges* (Order No. 3514841). Available from ProQuest Dissertations & Theses Global. (1034372186).

McMahon, W.W. (2009). *Higher learning, greater good*. Baltimore, MD: The Johns Hopkins University Press

McPherson, M. S., & Schapiro, M. O. (1999). *The student aid game: Meeting need and rewarding talent in American higher education.* Princeton University Press.

McPherson, M. S., & Winston, G. C. (1993). The economics of cost, price, and quality in US higher education. In *Paying the piper: Productivity, incentives and financing in US higher education* (pp. 69-108).

Monks, J. (2014). The role of institutional and state aid policies in average student debt. *The Annals of the American Academy of Political and Social Science, 655*(1), 123-142.

Nora, A., Barlow, L., & Crisp, G. (2006). Examining the tangible and psychosocial benefits of financial aid with student access, engagement, and degree attainment. *American Behavioral Scientist, 49*(12), 1636-1651.

Perna, L.W., Kvaal, J. and Ruiz, R. (2017). *An updated look at student loan debt repayment and default*. Penn Wharton Public Policy Initiative. 46. https://repository.upenn.edu/pennwhartonppi/46

Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence approach*. NY: Harper and Row Publishers.

Pfeffer, J. (2005). Developing resource dependence theory: How theory is affected by its environment. In *Great minds in management: The process of theory development* (pp. 436-459). Oxford University Press, Oxford, UK.

Razaki, K. A., Koprowski, W., & Lindberg, D. L. (2014). The student loan crisis: background, motivations of participants, and regulatory issues. *Journal of Business & Accounting, 7*(1), 94-105.

Rhoades, G., & Slaughter, S. (2004). Academic capitalism in the new economy: Challenges and choices. *American Academic*, *1*(1), 37-59.

Rothstein, J., & Rouse, C. E. (2011). Constrained after college: Student loans and early-career occupational choices. *Journal of Public Economics*, *95*(1), 149-163.

Rowley, D.J.; Lujan, H.D.; Dolence, M.G. (1997). *Strategic change in colleges and universities*. San Francisco. Josey-Bass.

Taylor, B. J., Cantwell, B., & Slaughter, S. (2013). Quasi-markets in US higher education: The humanities and institutional revenues. *The Journal of Higher Education*, *84*(5), 675-707.

Taylor, B. J., & Morphew, C. C. (2014). Trends in cost-sharing in the US and potential international implications. *Higher Education Policy*.

Thelin, J. R. (2011). *A history of American higher education*. JHU Press.

Tolbert, P. S. (1985). Institutional environments and resource dependence: Sources of administrative structure in institutions of higher education. *Administrative Science Quarterly*, 1-13.

Toutkoushian, R. K. (2001). Trends in revenues and expenditures for public and private higher education. In *The finance of higher education: Theory, research, policy, and practice* (pp. 11-38).

Watson, B. D. (2014). Preserving the promise of higher education: ensuring access to the "American dream" through student debt reform. *University of Florida Journal of Law & Public Policy*, *25*(3), 315-330.

Weisbrod, B.A., Ballou, J.P., & Asch, E.D. (2008). *Mission and money: Understanding the university*. New York: Oxford University Press.

Winston, G. C. (1999). Subsidies, hierarchy and peers: The awkward economics of higher education. *The Journal of Economic Perspectives*, *13*(1), 13-36.

Winston, G. C. (2004). Differentiation among US colleges and universities. *Review of Industrial Organization*, *24*(4), 331-354.

Zhang, L. (2010). The use of panel data methods in higher education policy studies. In J. Smart (Ed.), *Higher education: Handbook of theory and research*, Vol. 25 (pp. 309-347). New York: Springer.

Zumeta, W. (2011). State policies and private higher education in the USA: Understanding the variation in comparative perspective. *Journal of Comparative Policy Analysis: Research and Practice, 13*(4), 425-442.